The New Data Center
Rethinking networked IT

In this, the fifth installment of a six-part series, we showcase how wireless fits into your new data center architecture, do-it-yourself disaster recovery and more. Supplement begins after page 28.

NetworkWorld

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August 23, 2004 ■ Volume 21, Number 34

State IT execs betting on VoIP

■ BY TIM GREENE

In California, there might be a new killer app for VoIP: balancing the state budget.

A top-to-bottom look at spending called the California Performance Review (CPR) recommends adopting VoIP across state government as a way to save up to $6.3 million per month statewide. The review, by a panel created by Gov. Arnold Schwarzenegger, says agencies pay anywhere between $20 and $117 per month for phone.

In their effort to stretch taxpayer dollars, CPR authors are latching on to just one of the benefits of VoIP — cost — that is making the technology increasingly popular among state IT officials, many of whom are meeting this week in Providence, R.I., at the National Association of State Telecommunications Directors (NASTD) annual conference. Other benefits include support for advanced services, simplifying network architecture and backing up existing systems.

See NASTD, page 81

Colleges cram for test of new security plans

■ BY JOHN COX

■ **Anti-virus vendors are starting to tackle the security ramifications of spyware. Page 12.**

Bushwhacked last fall by computer worms, network managers at U.S. colleges have taken steps to make sure it won't happen again next month when the new academic year begins.

The steps include embracing Microsoft's Windows XP Service Pack 2, installing new intrusion-detection software, scanning every PC that tries to connect to the campus network, and working harder to convince faculty and students that they have a stake in network security.

But the steps are part of a larger shift in network security awareness: treating every client as a potential threat and continuously monitoring a client's behavior

See Campus, page 16

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Is security ripe for outsourcing?

■ BY JENNIFER MEARS

Industry insiders debate whether it's best to handle e-mail security in-house or use a service provider. Page 59.

Security demands for online applications such as e-commerce and Web services are prompting more corporate customers to hand off security functions — such as intrusion detection and firewalls — to outside service providers.

Users are finding that third-party security service providers can also help augment an internal security strategy by preparing reports required by many new government regulations.

As a result, the trend toward outsourcing security functions, which peaked during the Internet boom, is slowly angling upward again as companies discover that handing off routine security activities enables them to focus internal security expertise in more critical areas. However, hurdles remain, and many companies still prefer to keep such sensitive IT functions in-house.

"As we've seen the economy pick up over the past six or eight months, we've seen companies

See Outsource, page 80

A Wider Net

Keeping track of NASCAR

The technology driving telecasts just might surprise you.

■ BY JASON MESERVE

SHERRYL CREEKMORE/NASCAR

Fans of the sport say to truly appreciate NASCAR racing, you have to attend an event in person to see the cars whizzing by, hear and feel dozens of vehicles revving to over 9,000 rpm as they throttle up to the green flag at the start of the race, and smell the burnt rubber from a spinout or a tire-smoking victory celebration. The 91,000-plus fans sitting in the stands at last month's Nextel Cup race at New Hampshire International Speedway attest to the sensory experience of big-time auto racing.

But the on-site crowd probably didn't know that on lap 21 Kasey Kahne got his red No. 9 car up to 157 mph on the front stretch before slowing down to a more leisurely 96 mph to take the curve. Or that Ricky Rudd's 21

See NASCAR, page 14

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CLEAR CHOICE TEST

I can see for miles

Sourcefire's RNA provides instant visibility into your network. **Page 63.**

Full tool box

The Oracle Collaboration Suite is a comprehensive set of tools to help companies manage information. **Page 65.**

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Telework Beat
Election season plays, Part 2
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News Bits

Survey: Most homes now have broadband

A majority of U.S. home Internet users now have broadband, according to a survey by NetRatings. While the total number of home Internet users has reached a plateau in the U.S., those who do use the Internet are adopting broadband at a rapid pace, according to the audience measurement company. In July, there were an estimated 63 million broadband users, or 51% of all home Internet users, compared with 61.3 million dial-up users. A year earlier, broadband users were just 38% of all home Internet users, at about 42.8 million, and dial-up users were 62%. Over the same period, the total number of Americans using the Internet at home grew less than 10%, from 113 million in July 2003 to 124 million in July of this year.

Lindows puts IPO on hold

Lindows, the Linux-based software developer best known for its legal battles with Microsoft, has indefinitely shelved its plans to become a publicly traded company because of "current adverse market conditions," it announced last week. Lindows has not withdrawn its registration statement with the Securities and Exchange Commission and hopes to proceed with the IPO once market conditions and public company valuations improve, the company said. Founded in July 2001, the desktop Linux specialist shipped its first product in January 2002 but has been renowned primarily for its two-and-a-half-year trademark dispute with Microsoft over the similarity of the LindowsOS product name to Windows. In July, Lindows agreed to change its legal name to Linspire by Sept. 14 and to end the use of the Lindows name in its products in exchange for $20 million from Microsoft.

MCI embracing IP abroad

MCI next year will convert its international voice trunking to IP under a plan it says will reduce the cost of running its networks and also give it the opportunity to offer new services. According to the company, it will install Ericsson gear at MCI's international gateways to convert traditional TDM voice traffic and signaling into IP for transport abroad. The gateways also will serve as access points to its network for IP traffic from customers and other carriers. MCI has introduced VoIP to its network gradually, adding VoIP services two years ago and voice-over-DSL services earlier this year. VoIP enables service providers to run a single network for voice and data traffic, making their network designs and operations more efficient. VoIP also enables easier integration of voice and data into single services such as collaboration and unified messaging. MCI says it is already installing the gateways that will start carrying customer traffic in the middle of next year.

Deadline nears for award nominations

If you've poured your soul into a network project that is worthy of industry-wide recognition, we want to hear about it. Each year we honor readers who show excellence in their work with two awards: the Extended Enterprise Innovator Award and the User Excellence Award. But the window of opportunity is nearly closed — the deadline for nominations is Aug. 28. The time is now to toss your project (and name) into the hat for consideration. This marks the 20-year anniversary of the User Excellence Award. Previous winners include some of the biggest, most respected names in corporate America. Point your browser to *www.nwfusion.com, DocFinder: 2633 for more info and an online nomination form.*

TheGoodTheBadTheUgly

Fair warning. California lawmakers have voted to require the state's employers to notify workers in writing if the company is monitoring e-mail or Web surfing. Employers already are required to disclose if they are listening in on phone calls.▼

BRIAN GAIDRY

Phishing at work. SAP has issued a warning telling customers not to provide confidential information on the phone to people claiming to be company support staff. SAP has a policy never to request confidential information from customers over the phone. More companies are adopting similar policies governing e-mail, too.

Fresh meat is spoiling faster. An unprotected PC tossed on the Internet will become infected by a worm within an average of 20 minutes, down from 40 minutes only a year ago, according to researchers at SANS.

RFID project to track documents

NEC last week said it has signed a contract with a Japanese bank for a radio frequency identification-based document management system. NEC said the system is the world's first to use RFID for this function, and said it will be introduced by the Bank of Nagoya next April. Bank of Nagoya is a regional bank in central Japan. Financial details of the agreement were not disclosed.

The system, which is still under development, will use omnidirectional antennas attached to bookshelves and filing cabinets that communicate data from RFID tags embedded in documents to a software system that offers real-time document tracking, according to NEC. The system, which NEC is targeting at banks, financial institutions, libraries, hospitals and other institutions that store sensitive documents, is designed to be combined with other security systems to provide comprehensive and detailed document protection.

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Nortel looks to enterprise in overhaul

Company relying on corporate business to recover from financial scandal.

■ BY JIM DUFFY

If there were any doubts about Nortel's commitment to the enterprise, they should be vanquished now.

Amid the layoffs, executive firings and operational consolidations announced by Nortel last week was a strategic emphasis on its enterprise business as the company looks to regain financial footing after an accounting scandal. Enterprise is one of two Nortel business units — Carrier being the other — left standing under the reorganization plan.

"We remain strong in the enterprise business; it's growing," says Nortel CEO Bill Owens. Enterprise products accounted for more than 20% of the company's revenue each of the past two quarters, outpacing two of what had been four company units before the reorganization.

Nortel also is gunning for the defense and government markets, which represent tens of billions of dollars annually in the U.S., Owens says.

He also says enterprise operations were spared the brunt of the 3,500 layoffs announced last week, which represents 10% of Nortel's workforce.

The renewed emphasis on the corporate world comes none too soon to some. Barring such a renewed commitment, investment firm UBS Warburg suggested recently that Nortel consider paring down or even selling off its enterprise and optical units to reach profitability targets. Analyst Nikos Theodosopoulos says enterprise and optical were a "drag" on Nortel's profitability

Also, Nortel is a distant No. 2 to Cisco in enterprise LAN switching with a 5.3% share of the $3.3 billion market in the second quarter, according to Synergy Research.

Nortel's LAN switching revenue dropped 10% between the first and second quarters, Synergy says. Growth in the company's enterprise business has been weaker than Nortel's competitors for two years, according to UBS Warburg.

Owens says Nortel did consider spinning off or selling its enterprise business. But the synergies between enterprise and carrier, and the role the unit plays as the "seedcorn" for Nortel's defense and government activity, convinced the company to retain it.

"I don't think it has been in the natural DNA of Nortel to be strongly in the enterprise business," Owens admits. "It hasn't had the focus and the direction that is natural for Nortel to have with its biggest customers, the major telcos of the world. But as major telcos have become more interested in enterprise and bundled IP solutions, so have we."

In establishing the Enterprise and Carrier business units, Nortel consolidated four units into two. The previous ones were Wireline, Wireless, Optical and Enterprise.

Owens says the streamlining reflects market realities. "We're all heading toward a converged solution," he says. The reorganization also will result in a more customer-attentive structure dedicated to integrating security into the converged product set, he says.

Analysts say the industry should take note of Nortel's move.

"The reorganization reflects the convergence of fixed and mobile worlds and the need to have an organization that is customer and value-chain facing, rather than split by traditional product/market segments," says Bill Lesieur, director of Technology Business Research. "[It] will drive both organizational change within the equipment industry and structural changes in the industry as the competitive environment becomes driven by companies that have a balance of integrated fixed and mobile infrastructure solutions" rather than dominating one product area or another.

Nortel estimates the reorganization will cost $300 million to $400 million but will save the company $450 million to $500 million annually, including reductions in research and development spending and investments in long-haul optical systems.

Nortel also fired seven more executives last week as the company continues to repair the damage wrought by its accounting scandal. The scandal, which triggered ongoing criminal investigations of Nortel by Royal Canadian Mounted Police, the Securities and Exchange Commission and the Ontario Securities Commission, cost Nortel CEO Frank Dunn and two other executives their jobs in April. Nortel will seek to recoup $10 million in bonuses from the 10 terminated executives, Owens says.

In addition to its reinvigorated efforts on the enterprise market, Nortel — like its rival Lucent — is investigating opportunities in the professional services business. ■

CA looks to reduce 'integration tax'

■ BY DENISE DUBIE

Jeff Goldberg uses many Computer Associates Unicenter software applications to manage the network at Walter Reed Army facilities. With each CA product, he says he has to tap into a separate database and sometimes hop from console to console to compare management data via the administrator interface.

"At the very least, it's inefficient, but it could also be causing performance and back-up issues," says Goldberg, director of enterprise management services for Management Solutions & Systems, a systems integrator in Capital Heights, Md., in charge of maintaining management software for Walter Reed, in Washington, D.C. "CA needs to integrate its products more. If certain products were sharing the same database, it would make it easier for reporting and back-up purposes," he says.

Goldberg is the kind of customer CA has in mind with its Management Database, technology the company detailed at a briefing last week and which is expected to emerge in CA products as early as this year. Typically, each CA product has its own data repository, but with the new technology users will have the option to use a shared database or maintain a separate database for each CA applications.

CA says it has created a standard interface for its software that customers can opt to use via the company's portal software for multiple products, or maintain separate consoles.

"Integration is really a tax on IT users. They pay for the product, but then have to pay more and more for integration," says Mark Barrenechea, CA's executive vice president of product development.

CA CTO Yogesh Gupta says by sharing data, CA management, security, storage and application life-cycle products also can interact to automate complex IT tasks such as patch management. He says CA doesn't expect customers to replace everything they have with new CA software, but they might want to reap the added benefits of integration.

"If the software that tracks your assets can use that asset data to perform vulnerability scans and patch machines, then why not take advantage of the capabilities gained by sharing data," Gupta says.

Industry watchers say it will be a challenge for CA to integrate its vast product line.

"The biggest challenge for CA is to identify where it makes sense to integrate. The company needs to focus on what customers need now," says Stephen Elliot, a senior analyst with IDC.

Competitors such as HP and IBM also have announced integration plans: HP with its OpenView Management Integration Platform, which lets management systems share data via Web services; and IBM's Common Event Infrastructure, which helps Big Blue better integrate and correlate events from business, application and IT systems on one console.

"All of these product lines are beginning to hone in on what their value is and how much more they can do if they actually share information," Elliot says. "The management vendors realize the economy has changed and there is a trend toward tool consolidation among customers, so they need to make the case for using their products stronger."

In Goldberg's case, he'd like to see a database shared among products such as Asset Management and Software Delivery because he uses the products in concert to upgrade applications and roll out patches. But he says he is skeptical about all CA products tapping the same data resource.

"There is too much of an element of putting all your eggs in one basket for me," Goldberg says. "It's just too easy for a database to become corrupted. I wouldn't want everything tied to the corrupt data source." ■

The Computer Associates plan

The company's network and systems management plans face several challenges.

Strategy	Challenge
Provide an integration framework under the covers and across all products.	CA needs to establish a clear product calendar detailing which software will be upgraded with the integration technology in areas customers most need, such as management, security and storage.
Attack security problems with products to address identity, threat and security information management.	CA has to either combine existing products or develop new products that can proactively detect advanced security threats, such as spyware, and lock down networks from further infection.
Integrate business-process policies into its primarily IT-management product line.	CA must prove its technology background can translate into letting customers identify and define processes and translate that into management software.

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XP SP2 deployment is smooth — so far

BY JOHN FONTANA

As Microsoft smooths out the ripples after last week's big splash with Windows XP Service Pack 2, users say they found fewer problems than they expected, but some complain that late code changes and lingering compatibility issues will serve to refuel testing efforts and further delay full-scale deployments.

The biggest deployment issues last week involved tweaking the Windows Firewall, which is turned on by default, to open ports or configure exceptions to ensure applications such as anti-virus and management work correctly.

Microsoft also issued a hot fix to correct an IP addressing bug that was crippling VPN software and another that will make it possible to edit new XP SP2 Group Policy Objects from older Windows platforms.

The company also fixed a bug that prevented users with Software Update Services, which lets corporations centrally manage patch deployments from inside their firewalls, from controlling the installation of XP SP2.

"We have seen fewer problems than expected and not anything major," says Russ Cooper, moderator of the NT BugTraq Web site and senior scientist for TruSecure, which develops security and risk management products and services. He says preliminary results of his online survey of more than 600 people show 43% of users plan to deploy the software in the next 30 days or less and 25% in the next three months, while 14% were undecided on when to deploy.

Some users, however, discovered compatibility problems with applications they already had tested and blamed last-minute changes Microsoft made to the XP SP2 code.

"If I am upset about anything it is the fact that Microsoft did make what I consider to be significant last-minute [code] changes in the final days and weeks without providing even those with extraordinary access [to source code] the ability to test their applications," says Jeff Altman, president of Secure Endpoints, a consulting firm in New York.

Barry Goffe, group product manager for Windows product marketing, says "a fair number of changes were made between the release candidate and final code," but adds that this is normal procedure for all software development.

Others found severe incompatibility problems with homegrown applications and some say the XP SP2 code is not ready for enterprise deployments.

"It's sloppy code," says Ian Hayes, a security manager for a major government contractor he asked not be named. "This service pack may be more suitable for XP Home users but not for people who use power apps or security tools that run XP Pro."

Hayes says he found that SP2 erased restore points used to roll back to a stable operating system configuration, forcing the rebuilding of some desktops. "It's going to be a long slow evaluation," he says.

A German research firm reported it found two bugs, but Microsoft officials refused to comment on what it labeled "unsubstantiated issues."

But with nearly 300 applications already affected by XP SP2, some large corporate customers aren't exiting the test phase.

"We have decided not to do SP2 at this point," says Richard Mickool, executive director of information services at Northeastern University in Boston. "We're just not sure of what applications and how many it will break. Until we know what and how, we want to work carefully around that."

Others also say they are allowing for prudent evaluation periods, but say problems they are finding with broken applications is the price for converting to a more secure operating system.

Joe Doyle, network engineer for Promega in Madison, Wis., is at the start of his final three weeks of testing. "Knowing that changes to the [operating system] will help mitigate new worms and viruses and protect our users, sometimes from themselves, lets us as systems administrators sleep better at night."

"With the firewall turned on by default that means a whole class of attacks on Windows will no longer succeed. And hooray for that!" says Mark Rockman, programmer and systems administrator for Alphagenics in Rockville, Md., who already has rolled out XP SP2 on his small network without incident.

But others had enough incidents to know that XP SP2 won't make it out of their test labs for some time.

"We have a lot of homegrown applications that did not work well with SP2. It will be six months before we roll it out," says Chip Logan, IS manager for Alvey Systems, which manufactures material handling equipment, with U.S. headquarters in Danville, Ky.

In the end, users say XP SP2's greatest feature might be that Microsoft is starting to understand security.

Network World Senior Editors John Cox, Tim Greene and Ellen Messmer contributed to this story.

Service Pack evaluation

With Windows XP Service Pack 2 out now for a week, users report they are seeing fewer problems than expected. The two most prevalent issues require a hotfix or a firewall configuration change to correct.

Issue:	Solution:	How to get help:
Access to multiple local-host addresses blocked	Microsoft issued a pre-SP3 hotfix that corrects the problem that affects mostly SSL VPN software.	Users need to call Microsoft Professional Support Services.
Windows Firewall on by default	Microsoft released a list of some 250 applications that might behave differently, such as showing an extra dialogue box, and a shorter list of some 40 applications that require firewall configuration changes before they will function correctly.	Check with the specific vendor or look at a list on Microsoft's Web site. See www.nwfusion.com, DocFinder 3449.

Compellent unveils low-end SAN

BY DENI CONNOR

Compellent this week is expected to unveil a product for small and midsize business storage-area network users.

Storage Center QuickStart is designed for users migrating from direct-attached storage (DAS) to a system that is more easily manageable and fault-tolerant. Consisting of a switch and storage array that uses Fibre Channel, Serial Advanced Technology Attachment, Serial Attached SCSI or SCSI drives, Storage Center QuickStart features a modular architecture that can grow from 1T to more than 100T bytes and attach to Fibre Channel or iSCSI networks.

Jason Glauch, network operations supervisor for Kyocera America in San Diego, considered HP's Enterprise Virtual Array, Xiotech's Magnitude 3D and Compellent's Storage Center when looking to deploy his first SAN. He wanted to consolidate the direct-attached storage on his NetWare 5.1 and 6.5 servers and save money in the process.

"Right now we have two NetWare servers that have 200G bytes of direct-attached storage," Glauch says. "With Compellent's Storage Center, we're not going to need those two servers anymore. Instead of buying a server with internal drives, we can get away with a less-expensive server and save $16,000 per server. We've saved about $60,000 so far."

Storage Center QuickStart ships with virtualization software and snapshot back-up capability. It includes the ability to expand storage volumes without taking the array down and boot servers from a SAN using pre-configured images of server operating systems and applications.

Glauch also saved money by not having to license server software separately, as he would have had to do with HP's or EMC's low-end SAN packages.

"With Compellent, we don't have a license fee per server that we attach to the SAN," he says. "If we had tried to do it with the HP EVA 3000, we would have had to pay $2,000 per server to attach it to the SAN. In addition, I couldn't boot my NetWare servers from the SAN."

HP has Secure Path software, which lets Windows servers boot from a SAN, but not remote boot software that supports NetWare.

Storage Center QuickStart also only uses disk space when data is written. Glauch says this will let him allocate more storage to a server than the amount of physical storage available on the array, thus maximizing storage utilization.

The market for low-end, easy-to-install SANs is growing. Qlogic has its 2G-byte SAN Connectivity Kit, which consists of a Fibre Channel switch, four host bus adapters, cabling and SAN management software. HP recently announced StorageWorks EVA 3000 Starter Kit, which includes 1T byte of Fibre Channel storage, management software and two Secure Path host licenses for $42,000.

According to research firm Access Markets International Partners, small and midsize businesses spent almost $2.8 billion on networked storage in 2003. That number will increase to almost $20 billion by 2006, the firm says.

The Compellent Storage Center QuickStart starts at between $20,000 and $30,000. ■

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Vendors automate content management

FileNet, Interwoven, EMC ready new products.

■ BY ANN BEDNARZ

Two content management vendors will broaden their product portfolios in the coming weeks to make it easier for customers to automate the error-prone job of archiving business documents.

FileNet and Interwoven are adding records management technology to their suites. The new tools are aimed at helping companies manage the records-related demands of legislation such as the Sarbanes-Oxley Act and Health Insurance Portability and Accountability Act.

FileNet built its records management module from scratch, while Interwoven paid $2 million to acquire technology from Software Intelligence.

Traditional content management technology is focused on the early life of a document — content creation, editing and access — says Robert Williams, president of consultancy Cohasset Associates. Records management, meanwhile, is focused on the latter part of the content life cycle, such as document retention (for purposes of auditing or discovery) and document disposal.

Combining the two disciplines makes sense, Williams says. For IT users, the opportunity to get more features from fewer content-related software providers is a plus.

Products such as the new FileNet Records Manager also can reduce the likelihood of record-keeping mistakes by automatically enforcing policies. Instead of putting the onus on people to follow records management policies and retention schedules, the software can make sure all records related to a specific business process or project are automatically declared, properly classified and retained, Williams says.

According to Williams' firm, companies can use all the help they can get. A recent Cohasset Associates survey found U.S. companies aren't vigilant about handling business records, particularly electronic documents such as e-mail and instant messages. Among 2,200 records managers, 47% said their company doesn't include electronic records in its retention and destruction schedules, and 59% don't have a formal e-mail retention policy.

Meanwhile, EMC's Documentum division has set its sights on easing another content-related pain: information retrieval.

According to research from Delphi Group, users spend at least two hours each day using computers to search for work-related information. To make that chore easier, EMC this week is expected to unveil a tool for integrating and searching multiple content sources from a single interface.

The vendor's Enterprise Content Integration Services software lets users integrate heterogeneous content from sources such as business applications, databases, Web search engines and syndicated content providers. It's built on technology EMC's Documentum division gained through its March purchase of Xerox's askOnce business unit.

EMC's Enterprise Content Integration Services and FileNet's Records Manager are available now; enterprise pricing for each products starts at about $100,000. Interwoven Records Manager is slated to be available by the end of the quarter. ■

Record gaps

The job of records management is not getting done, according to a survey of 2,200 records managers conducted by Cohasset Associates.

41% of respondents rate their existing records management program as marginal or fair.

38% don't regularly adhere to retention schedules.

59% don't have a formal e-mail retention policy.

33% are not confident their company, if legally challenged, could demonstrate that its electronic records were accurate, reliable and trustworthy.

Anti-virus vendors adding spyware to target list

■ BY ELLEN MESSMER

Businesses that use anti-virus software to protect employee desktops now say they also want to eradicate spyware, a demand that's prompting anti-virus vendors to plunge into spyware's murky waters.

For example, Computer Associates, which sells anti-virus software under its eTrust security product line, last week bought anti-spyware software vendor PestPatrol for an undisclosed sum.

McAfee this week plans to make available VirusScan Enterprise 8.0i, the first edition of its anti-virus software designed to wipe out 200 types of spyware in addition to protecting against worms. Other anti-virus vendors, including F-Secure, Trend Micro and Symantec, also are taking on spyware, said to include everything from adware to malware-like Trojans and keyloggers.

Whatever you call it, the thousands of incarnations of adware and spyware are raising security and privacy concerns and disrupting desktop machines.

"We are having to re-image about 20 desktops per week because they become non-functional from spyware," says Satish Ajnani, CIO for Santa Clara county, which supports a network of 13,000 desktops.

IT managers are glad that anti-virus vendors say they're ready to fight spyware. But many question how far anti-virus companies will get in their anti-spyware crusade.

To find both spyware and virus protection in one software package "would be nice," says Ted Downs, network operations manager at retail food chain Auntie Anne's, based in Gap, Pa. This probably would hold down costs. But so far, anti-virus vendors don't appear to have comprehensive spyware protection.

CA has no immediate plans to blend its eTrust anti-virus and the PestPatrol anti-spyware software. But by year-end the company will adapt PestPatrol to work with its eTrust management consoles to unify the anti-virus and anti-spyware software deployment and reporting, says Sam Curry, vice president of eTrust Security Management. "We'll have a common update engine for both."

One problem in adding comprehensive anti-spyware protection into anti-virus is that the software file size would bloat, says John Bedrick, group product marketing manager at McAfee.

"If we did everything Spybot or PestPatrol does, that would be about 8 megabytes," he notes. That would mean doubling VirusScan, which is about 10 megabytes.

"We're not claiming to be a replacement for anti-spyware," Bedrick says.

However, McAfee this fall likely will broaden its spyware scope although it's not clear whether this would end up in VirusScan or as a separate product.

F-Secure also is mulling a spyware defense. According to Mikko Hypponen, F-Secure's research director, the company plans to introduce anti-adware capability this fall.

Symantec in April added limited anti-spyware protection to its corporate anti-virus software, as a separate scanning engine for what it calls "expanded threats," says Gary Ulaner, Symantec group product manager. "We've put our foot in the water."

Anti-virus experts have started analyzing spyware in one of the most influential industry groups: the Computer Anti-Virus Research Organization. The group has found quite a bit of adware that's been abandoned in desktop machines, trying to relay information to Web sites that no longer exist.

"We look to try to find an end-user licensing agreement associated with it and maybe the Web site used to exist and it was once adware, but now it's just a Trojan," says Craig Schmugar, research manager at McAfee Avert Labs. In contrast, another industry group, the Anti-Virus Emergency Discussion Group, seldom focuses on adware in its mission to spot emerging threats.

As yet, no anti-spyware groups perform technical analysis on an industry basis comparable to that done in the anti-virus industry. The Consortium for Anti-Spyware Technology Vendors (COAST) has sought to address social and legal questions but probably hasn't tackled technical issues as much as it should, says David Mill, CEO of one of its founding members, Webroot Software.

COAST, which argues spyware is acceptable if based on a user's informed consent, has struggled with inner turmoil as one of its founding members, Lavasoft, which wanted to take a harder anti-spyware line, quit the organization earlier this year. ■

Organizations with an eye on spyware

Anti-virus and spyware: Worlds apart or coming together?

Name	Makeup	Purpose
Computer Anti-virus Research Organization (CARO)	Anti-virus experts	Analyze malicious code, determine common naming conventions. Increasingly focused on spyware/adware problems.
Anti-Virus Emergency Discussion Group (AVED)	Cross-industry group	Organized for first response to new malicious code threats by sharing specimens. Spyware/adware seldom a key topic.
Consortium of Anti-Spyware Technology Vendors (COAST)	Founded by PestPatrol, Aluria Software and Webroot Software.	Has sought to define spyware, especially as used for marketing purposes, and to offer industry view on social issues. Doesn't do technical analysis.

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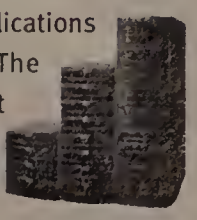

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NASCAR

continued from page 1

car was traveling at precisely 67 mph when it hit the wall rear-end first on lap 211. Viewers at home had all this information and more courtesy of the on-screen graphics that were part of the TNT live coverage of the Siemens 300 race.

Calculating and displaying real-time information such as speed takes more than a well-aimed radar gun and some quick hands on a keyboard. "It's the most complicated graphic to produce in television," says Bob Hess, track engineer for Sportvision, the Chicago technology company NASCAR contracts with to produce the real-time data and associated graphics for the television broadcasts.

In the TV compound that sat just outside the grandstand behind Turn 3 at the New Hampshire course, Hess and his team of a half-dozen engineers sat in one of the 13 TV trucks on site to produce the race. Sportvision's truck is dedicated to receiving, compiling and distributing telemetry and position data from each car in the race and pushing it out to regular TV, pay-per-view, the Web and Nextel cellular phones.

Each car is equipped with a GPS receiver embedded in the roof and a Data Acquisition and Positioning System (DAPS) black box mounted near the rear window that collects braking, throttle position and rpm information. Using a 900-MHz transmitter, the DAPS and GPS information is radioed to one of the three or four base stations positioned around the track. Multiple base stations are used for redundancy purposes, as objects in and around the track could block the signal. The telemetry data and GPS data is collected five times per second. To get from the base station to the truck, Sportvision taps into fiber cable connecting the camera positions around the track or a DSL modem connected to Category 3 cabling.

Sportvision's on-screen graphics let viewers at home see how fast their favorite driver is going and how hard his car's engine is working.

Cat 3? "It's cheaper [than Cat 5] and it works," says Ken Milnes, senior vice president of engineering at Sportvision.

Inside the truck, the communications controller (known as CC) aggregates all the data, including the official timing information from NASCAR, which is provided via an RS-232 serial interface. "CC organizes the data in a way that's useful for the other applications we run," Milnes says, adding that a proprietary format is used to store the data.

A Cisco Catalyst switch connects Windows XP and Linux machines used to produce graphics. Coaxial cable feeds the graphics data to the other production trucks for the TV broadcast. A machine called T-Sync helps synchronize the time codes from the video feed with the GPS time data.

Another challenge is to match the data with the car on screen as it traverses the 1.058-mile oval in roughly 30 seconds and is viewed from myriad camera positions. "As the camera is panning, tilting and zooming, we need to know what the camera is representing and where the car would be in the picture," Milnes says.

Sportvision also creates the K-Zone for ESPN baseball coverage and the yellow first-down line used in football broadcasts. Those are a bit easier, given a baseball diamond and football field are relatively uniform in dimension from park to park. For racing, where all the tracks are different, three-dimensional topographical maps of all 23 tracks in the NASCAR Nextel Cup Series have been created from aerial surveys of the properties, and each camera has a GPS unit that tells the truck exactly where it's located. This lets Sportvision's computers know where the car is within 10 centimeters. It also lets TV viewers see cartoon-like thought bubbles follow cars around the track that show real-time speed and the "dot racing" graphic that shows how far a car is behind the leader on a graphical representation of the track.

Sportvision also pushes the data out in a compact data format over a T-1 (with a back-up dial-up connection) to Turner Sports in New York, producers of the nascar.com site. Subscribers to the TrackPass service get a Java applet that shows the same data real-time telemetry information via the Internet. Pit Command, a graphical representation of the track and car positions, also is available on Nextel phones.

Ironically, all but the official timing and GPS information is available during an event to the race teams, as NASCAR prohibits them from using real-time telemetry data, all in the name of parity and competition.

Of course, the setup happens for 36 races almost every weekend over the course of the 10-month NASCAR season. Each track presents its own set of challenges for the crew. Although Williams Communications provides T-1 connectivity to the truck at each track using the same IP address (no need to reconfigure the on-board router), sometimes the local telco provider puts the physical line in the wrong place, which happened at the New Hampshire International Speedway this last time around. At Talledega Superspeedway in Alabama, one of the setup crew got lost for 2 hours in the sewer system while trying to run a cable under the track to the infield.

With the data Sportvision provides, racing fans watching on TV or the Internet get a feel for how close these guys are when hurling around the track. On lap 49, there was â 3.26-second difference between the first-and fifth-place cars, and there were three cars between them. So much for the 2-second rule you learned in drivers ed. ■

Proofpoint uses anti-spam product to find inside leaks

■ BY CARA GARRETSON

Anti-spam vendor Proofpoint wants to take what it knows about keeping spam out of an organization and apply it to helping companies keep trade secrets, intellectual property and other sensitive information inside the corporate network.

Within six months, the company plans to release software that uses the same base technology as Proofpoint's Protection Server anti-spam product to filter outgoing e-mail for information leaks, says company CEO Gary Steele. Proofpoint sees a large market for such software; a June study by Forrester Research, which Proofpoint commissioned, showed 43% of the 140 corporations surveyed employ staff to monitor outbound e-mail by reading its contents. The No. 1 concern of these companies is making sure confidential information and intellectual property is not dispersed. Compliance with regulations such as the Sarbanes-Oxley Act and Health Insurance Portability and Accountability Act are also concerns.

Proofpoint this week will release a gateway appliance, designed to protect large organizations from spam, and an upgrade to its spam-fighting software.

Proofpoint's P1000 appliance, which is designed for organizations with 25,000 users or more, can scan up to 4 million e-mails per day and offers 300G bytes of storage space — enough to quarantine 50 million unwanted messages, Steele says. The P1000 can be used by itself or with Proofpoint's smaller appliances in a "master-agent" configuration where all administration, reporting and access to quarantine folders happens centrally on the P1000, Steele says.

Given the different ways customers can deploy the P1000, Proofpoint says its appliance is more flexible and cost-effective than competing offerings from IronPort and CipherTrust.

The company also is releasing Version 2.5 of its Proofpoint Protection Server, available as gateway software or as part of the company's appliances. This release focuses on making the software easier to use, as opposed to implementing new spam-fighting tactics. The company sends customers weekly software updates of the latest spammer tricks, he adds.

Proofpoint Protection Server 2.5 lets administrators apply e-mail policies to groups, as well as to individuals, Steele says. It also features improved reporting capabilities, adding information about the level of end users' virus protection and their firewall activities. With 2.5, administrators can more easily search for messages and track a message's path through the anti-spam filter, he says.

Virginia's Prince William County schools plans to upgrade its Proofpoint appliances to Version 2.5, says Jim Hite, supervisor of network services and central operations. The software "takes the intervention out, we can let our users make their own assessment about what is spam or not," Hite says. "We have a very small staff, one e-mail administrator and one security administrator, so we have to do things smart."

Proofpoint's Protection Server features the company's MLX technology, a machine-learning system that "teaches" the software to identify spam based on several attributes. These attributes include telltale signs in an unwanted e-mail's IP address, message headers, structure, content and phrasing. For example, spammers often embed an abundance of HTML code in a message's text — Proofpoint's Protection Server automatically will detect its presence and flag the message as potential spam.

The P1000 appliance starts at $25,000, not including software. Proofpoint Protection Server 2.5 is priced between $2 and $20 per user per year. ■

More online!

For more on the technologies supporting NASCAR races, go to

DocFinder: 3437

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Campus
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once it authenticates.

"The big priority is security. It kind of drowns out everything else," says Brad Noblet, director of technical services at Dartmouth College in Hanover, N.H. "We continue to get pounded by viruses, and it eats up an awful lot of manpower, as well as disrupting people's lives."

The worm attacks of fall 2003 coincided with a new strategic planning effort unfolding at Ohio State University (OSU) to make security a priority. "We're paying vastly increased attention to security," says Charles Morrow-Jones, director of security and enterprise networking at the school in Columbus.

The change is reflected in the chain of command: Security used to be part of the enterprise networks group, but now Morrow-Jones reports directly to the CIO.

Other changes include centralized anti-virus and anti-spam software, instead of relying on PC applications. OSU selected Clam AntiVirus, an open source program, which can tie into e-mail applications; and Roaring Penguin's CanIt anti-spam software, a commercial application. Finally, OSU will launch a half-day training program for non-technical managers in departments such as finance and human resources on how to secure and protect PCs and data.

Changes like this are evidence that security is being seen as an increasingly broad issue, affecting how, and whether, services are delivered to network users. McGill University in Montreal is deploying a full-blown identity management system based on Novell's Nsure Identity Manager, Novell eDirectory and related products.

"We have students, in-house staff, faculty, alumni," says Gary Bernstein, McGill's director of networks and communications services. "We have to keep track of all of them in terms of their [network] rights and privileges, which are often changing. We want to capture this data and make it available for authorization as well as authentication."

"This is more than convenience," he says. "This is becoming the foundation for almost all network operations in any organization."

Dartmouth has not gone that far, but this fall it will introduce Aladdin Knowledge Systems' eToken, which is a small device that plugs into a USB port on a PC and manages a digital certificate. The certificate is part of an open source public-key infrastructure created by researchers at Dartmouth's PKI Lab (see www.nwfusion.com, DocFinder: 3438), a big step toward creating a secure, single sign-on for users instead of juggling numerous username/password combinations.

The eToken will be handed out to students with their Dartmouth photo ID cards. Initially, the token will be used for user authentication. Eventually, Noblet wants to upgrade the college's applications to support digital certificates and eliminate passwords.

Many institutions are introducing specific products for security, either creating new capabilities or beefing up current products.

One of the most popular is intrusion-prevention systems (IPS), which watch network or application use to report on suspected attacks or unauthorized activity. IPS devices can be configured to block traffic patterns that are known or suspected to be problematic.

Northeastern University in Boston is deploying TippingPoint Technologies' UnityOne IPS. "These devices sit on the net, so we can drop [suspect] traffic before it even becomes a problem," says Richard Mickool, executive director information services.

"You have to be careful as you put all your traffic through these devices," Mickool says. "You don't want to create a single point of failure, and you have to be careful what traffic you block."

Tufts University in Medford, Mass., is focusing on hardening the edge of the network by installing McAfee IntruShield. There are two goals, says Marc Jimenez, manager of network engineering and security: harden the network edge to block attacks from outside the university and detect internal hosts that have been taken over to launch attacks elsewhere. "This will give us another tool in locating internal hosts that have been compromised," he says.

Keeping PCs clean of viruses

New products and policies target keeping client PCs clean of viruses. But schools this year are going further: They want to quickly quarantine these machines and keep them off the network until the PCs are equipped with virus definitions and patches.

"That's absolutely the direction we're going in: You can't make your computer work on the net until you get scanned by us and get updated and also sign our acceptable-use policy promising to be a good [network] person," says Carl Whitman, executive director of e-operations at American University in Washington, D.C.

For now, when American University students first try to log on, they're redirected to a Web site to register their computers and get a valid IP address.

Dartmouth lets clients power up and get Internet access. But starting this fall, to get to applications and data, users have to be authenticated and scanned by Sygate's client/server software.

The Sygate agent is loaded on to each PC, and the server code hooks into the school's Norton anti-virus software and its authentication system.

At each logon, the Sygate software runs a set of checks on the PC's software. If Sygate detects problems, it directs users to a dedicated Web site, sometimes called a captive portal, backed by a tech support team. Users can't regain network access privileges until they download patches and get help to fix the weaknesses.

Dartmouth's help desk staff is more likely to reload the entire software image in a client PC than fix a specific problem, Noblet says. "The hackers are more sophisticated than they used to be," he says. "They write assembly language programs that are hidden from the directory and therefore from a program scanning the directory. We had some cases where we patched a machine, thought we had fixed the problem and then found later the virus was deeper in the machine."

This year will see a bigger emphasis on security outreach, education and evangelization. More schools will introduce network authentication procedures as a standard part of each student's fall registration. Summer information packages now include guidelines for outfitting student PCs with anti-virus software, and school security policies and best practices to keep a student's PC clean and safe.

"This year we're expanding our outreach efforts to include new avenues such as online video presentations, as well as messages contained in the software packages distributed to incoming students," Tufts' Jimenez says.

American University is creating a series of posters to be hung in on-campus buildings with warnings and tips about virus protection, spam and copyright issues.

Northeastern has added new network security information to the "welcome back" packets mailed to students. And this year, all residential students — not just the freshman — get client anti-virus software.

McGill is adding new self-service Web applications to simplify network requirements for users. One is a new Web site where staff and faculty can use a screen to set up a 24-hour guest account for wireless LAN access. In the past, users had to call the network staff to request this.

"It's the same old enemies: viruses, worms, [peer-to-peer] file transfers," American's Whitman says. "But there are some new resources."■

New fall curriculum: net security

Some changes that university network administrators have implemented for the new academic year:

- Intrusion-prevention systems, to quickly find and block suspicious traffic.
- Realigning security functions and chain of command.
- Rigorous scanning of PCs, and blocking network access until users have up-to-date software, patches and virus definitions.
- Directory-based identity management system for authorizing access to services and authentication.
- For the first few weeks of fall term: early-morning staff meetings to identify problems, coordinate responses.
- Security awareness seminars with faculty and staff on "how to secure and protect your PC and data."
- Taming rogue e-mail servers by registering them; linking with central anti-virus filtering software.
- Electronic tokens, or smart cards, for improved authentication, stronger password.

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New Microsoft server tightens integration

■ BY JOHN FONTANA

Microsoft next month is set to ship the latest version of its integration server that helps users build a bridge between Windows-based distributed applications and IBM mainframe transactions.

Host Integration Server (HIS) 2004, the first upgrade of the server in four years, is highlighted by tight integration with Microsoft's .Net programming model. The idea is to give next-generation Windows developers hooks into mainframe and midrange systems such as AS/400.

HIS 2004 is designed to support Windows-based front-end applications that can trigger transactions on the mainframe. In addition, host-initiated applications can retrieve data from the Windows platform using HIS 2004 as a gateway.

"We want to fool the application so that mainframe data looks like native SQL Server data," says Tim Kelly, director of distributed technologies for Total System Services in Columbus, Ga., one of the world's leading processors of credit card transactions. "HIS allows us to take the results of a [mainframe] transaction and let a Windows application retrieve the data from a table that is populated with the transaction results."

Kelly says the company has built a series of Web applications where a customer service representative can click one button to block use of a credit card and another that issues a new card when a customer reports his card missing. Both clicks from within the Windows application initiate a transaction on a back-end mainframe.

To help developers build those types of applications, Microsoft has tightened integration with Visual Studio, added new IP routing features, and added single sign-on capabilities that match Windows credentials to those on the mainframe.

HIS 2004 lets users integrate host applications, data sources, messaging and security systems. It is a key component of Microsoft's integration strategy, which also includes BizTalk Server, and for the single sign-on component of its identity management road map. HIS 2004 competes with IBM's line of WebSphere extensions for integrating mainframe data with Web-based applications written in Java.

> **"HIS allows us to take the results of a [mainframe] transaction and let a Windows application retrieve the data . . . "**
>
> **Tim Kelly**
> Director of distributed technologies, Total System Services

"It's been some time between versions of HIS, but we think this new version renews our commitment to this space," says Tom Casey, product unit manager in the business process and integration division at Microsoft.

"There is no end in sight for COBOL applications running on the mainframe, because there is no ROI to port them to a modern platform," says Peter Pawlak, an analyst with research firm Directions on Microsoft.

Microsoft is focusing on deeper integration between HIS 2004 and Visual Studio development tools. The highlight is the Transaction Integrator design tool, which runs within the project designer in Visual Studio and lets developers expose Customer Information Control System and Information Management System transactions to Windows as COM+ components, .Net packages or XML-based Web services.

Microsoft also has added a feature for tunneling SNA traffic into the mainframe over an IP network. The new IP-DLC Link Service lets PCs connect to z900 mainframes via IP networks.

Also new is a managed provider for IBM's DB2 database, which lets DB2 data be published as Web services or integrated into Windows forms, such as those that Microsoft's InfoPath application produce.

HIS 2004 also lets Windows servers act as peers to IBM mainframes and AS/400 computers with the new Host-Initiated Processing feature. The new Enterprise Single Sign-On passes Active Directory authentication credentials to mainframe systems. Microsoft also plans to make an API available so third-party vendors can build password synchronization tools.

HIS 2004, which is scheduled to ship Sept. 1, is available in Standard and Enterprise editions. The Standard Edition costs $2,500 and includes the core network, data and security integration technologies. The Enterprise Edition costs $10,000, and adds the Transaction Integrator and a MQSeries and Microsoft Message Queuing bridge. ■

Correction

■ The story "CoreStreet scales digital certificates" (Aug. 9, page 41) incorrectly stated that the OCSP standard (RFC 2560) required the use of nonces. It does not make that requirement and therefore CoreStreet is in compliance with the standard in this regard. CoreStreet received an overall score of 3.45.

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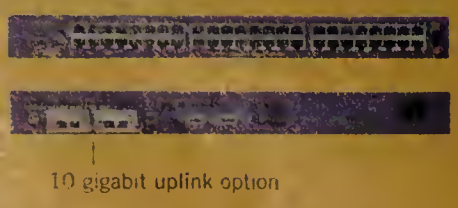

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Infrastructure

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Short Takes

■ **HP** last week released the final processor upgrade for its **AlphaServer** line of Unix servers. The 1.3-GHz EV7z marks the last in a line of RISC processors initially developed by Digital Equipment but ultimately acquired by HP as part of its 2002 acquisition of Compaq. First developed in 1992, the Alpha processor was highly regarded by analysts for its technical capabilities, but it never managed to attain the market share of rival RISC processors from IBM, Sun or HP. Its death blow came with the Compaq acquisition when it became a victim of HP's strategic decision to adopt Intel's Itanium processor in favor of RISC alternatives. HP will continue to sell its AlphaServers through 2006 and will support them until 2011. The EV7z is available in HP's AlphaServer GS1280 servers, which start at $96,100, according to HP. HP also will offer a faster, 1.15-GHz version of the EV7 processor, which ships in its lower-end ES47 and ES80 systems. Pricing for the ES47 and ES80 systems with the new 1.15-GHz EV7 will start at $29,200 and $49,300, respectively.

■ Storage start-up **Intransa** last week unveiled an iSCSI appliance designed for departmental use. The Intransa **IP 3000 Storage System,** which is available in 2T- and 4T-byte models, connects to a company's Gigabit Ethernet network. The IP 3000 includes point-in-time copy-capability system backup and built-in mirroring. It works with Windows, Solaris or Linux hosts. The Intransa IP 3000 starts at $32,000 for a 2T-byte system. A 4T-byte IP 3000 starts at $38,000.

IOS changes could alter face of Cisco routers

■ BY PHIL HOCHMUTH

Companies can expect to see more modularity and features in Cisco's IOS software over the next several quarters, as the elements of technology it recently introduced for carriers trickles down to business customers.

The introduction in May of IOS-XR, the software powering Cisco's CRS-1 terabit router, signals a new direction for IOS, as the software will take on a more modular architecture, with the promise to users of greater stability and easier management. Cisco says this transition for enterprise networks will be gradual, and observers warn that new features might entail hardware upgrades.

IOS-XR is Cisco's next-generation operating system for its new flagship CRS-1 router, which scales to 96T bits of bandwidth with support for multiple OC-768 (40G bit/sec) SONET interfaces. IOS-XR is based on a microkernel from QNX Software Systems, which makes real-time operating system software.

IOS currently works a single piece of executable code on a router; features and functions are added into unique software builds, based on customer needs. The new architecture more resembles a PC or server, with an underlying operating system that runs IP services as separate processes — similar to Microsoft Word running on a Windows PC. Observers say this technique can make routers more resilient and faster.

■ ANALYSIS

"We'll be looking to bring some of those capabilities into the broader enterprise market," says Martin McNealis, senior director of IOS product management at Cisco. However, what ends up in enterprise IT shops will not be exactly the same IOS-XR used by carriers — or potentially used by carriers, because Cisco hasn't sold a CSR-1 yet.

"The [multi-chassis] fully distributed [IOS-XR] model that's appropriate for major service provider backbones is probably overkill for the enterprise market," McNealis says. "We would look to get [corporations] a version of IOS-XR that is maybe less sophisticated and complex."

McNealis says this trickle-down effect already started last month with the release of IOS High Availability (IOS-HA) for the Catalyst 6500. A new feature in IOS Version 12.2S IOS-HA lets Catalyst 6500s run dual supervisor cards and failover without losing packets or causing even a millisecond of network disruption, Cisco says. This technology, used previously on Cisco 120000 series routers, improves on previous redundant configurations, which involved a secondary supervisory module rebooting the router when the primary fails.

IOS evolution

McNealis says the road to the new QNX-based IOS-XR began five years ago, when Cisco was acquiring start-ups and churning out new products almost monthly.

See Cisco, page 20

Road ahead for IOS

Some challenges facing Cisco's IOS and strategies for growth.

Challenges

- Simplify the myriad IOS builds available to enterprise customers with a more modular architecture.
- Improve IOS security as the software becomes a more visible target to hack attacks.
- Let IOS interoperate with different types of devices from third-party vendors.

Strategies

- Move the modular feature of IOS-XR currently for carriers only into the enterprise market.
- Explore new Cisco platforms to deploy IOS — such as Linksys small-office/home-office devices.
- Add software redundancy to core IOS-based switch platforms, such as the Catalyst 6500, and beyond.

IBM adds four-way server to i5 line

■ BY TOM KRAZIT

IBM last week bolstered the new eServer i5 server lineup with a box designed for small and midsize businesses looking for an off-the-shelf server that is easy to integrate into an existing environment.

A new system based on the Power 5 chip that can run multiple operating systems, the i5 550 is the third i5 server to emerge from IBM. In recent months, the company has moved to standardize its former pSeries and iSeries servers on a common set of components and operating systems.

The i5 servers, the former pSeries now known as p5 servers, have been designed for larger businesses that require a custom server for their environments.

I5 servers come with IBM's i5/OS operating system and DB2 database software but can run several operating systems, including Linux, AIX and Windows. IBM's Virtualization Engine software brings partitioning and system management capabilities, once confined to mainframe systems, to the new i5 series servers.

Customers can purchase the server with several application bundles from software vendors such as PeopleSoft and Lawson Software, or a version with IBM's Lotus Domino e-mail software.

IBM's i5 550 server comes with four Power 5 processors, but IT managers can choose to purchase the machine with only two processors activated if their application workload doesn't require the additional capacity right away. This feature gives those businesses the flexibility to purchase a two-way server but have the capacity of a four-way server already built into the system, IBM says.

"The 550 is the one you buy when you know that four-way is as big as I need. It lacks the additional scalability infrastructure and is thus less expandable, but the upside is you get it at a better price," says Jonathan Eunice, principal analyst with Illuminata.

The two-way configuration costs $74,000. The activation fee for each additional processor is $3,700, plus operating system or application licensing costs. It will be available next month, IBM says.

Krazit is a correspondent with the IDG News Service.

WIRED WINDOWS

Dave Kearns

Novell shoots blanks on Linux offer

A couple of months ago, Novell announced that anyone who wanted to try its new Linux offerings and utilities could sign up for what's called the "Novell Linux Technical Resource Kit." Well, if a company with real marketing had been behind it there would have been great fanfare and much hoopla. This announcement simply showed up on a Web page. This is Novell we're talking about after all, and, as the old saying goes, its extremely difficult for the leopard to change its spots.

Still, stealth marketing did its job via word-of-mouth and the occasional mention in a column or news story. Many people did, in fact, sign up to receive the free CD containing:

- SuSE Linux Standard Server 8.0 (ISO installation images).
- SuSE Linux 9.1 Professional (bootable installation DVD).
- Ximian Desktop 2.0 Evaluation (ISO image).
- Ximian Red Carpet 2.0.2 Evaluation (ISO image).
- Novell Linux Services 1.0 (ISO image & NLS companion CD).
- Novell GroupWise for Linux 6.5.1 — Server, Client & Messenger (ISO images), and a lot more.

In mid-July, Novell announced a delay because of the "phenomenal response to this free offer," according to a note sent to those who had registered for it, but it was still due to ship in late July. Two weeks ago, in mid-August, recipients were finally notified that the package had shipped ("please allow up to six weeks for delivery ...").

Turns out that, with the delay, the Standard Server 8 had turned into SuSE Linux Enterprise Server 9. That's certainly worth the wait, isn't it? In fact, many more people now thought this was a good deal and flocked to the Novell registration page to sign up. What they found was a notice (www.nwfusion.com, DocFinder: 3434) that says, in part: "We appreciate your interest in the Linux Technical Resource Kit, offered by the Novell Customer Communities. At this time we are not accepting any more orders ..."

Did they run out of Linux?

Maybe it was all just a marketing scam to get you to give Novell your e-mail address so it could spam you with advertising. After all, most people still haven't received the package that they'd expected in late July. Novell might be the bright new star in the open source firmament, but its marketing is just as tarnished as ever.

Kearns, a former network administrator, is a freelance writer and consultant in Silicon Valley. He reached at wired@vquill.com.

Tip of the Week

With many people (IBM, me, etc.) warning that **Windows XP Service Pack 2** might break more than it fixes, Microsoft has taken the strange step of creating what amounts to being a marketing site (DocFinder: 3435) for the update in order to convince you that you really need it!

HP ProLiant delays continue

■ BY ROBERT MCMILLAN

HP customers will continue to have difficulties ordering custom configurations of HP's ProLiant servers through the end of this month, company executives told attendees at the HP World conference last week in Chicago.

The delays are caused by continuing problems with an SAP order-processing and supply-chain deployment rolled out last month, they said.

HP's troubles began over the July 4 weekend when the company rolled out the system designed to unify the Digital Equipment, Compaq and HP order-processing systems the company was left with after its 2002 merger with Compaq, said Mark Gonzalez, vice president of HP America's enterprise storage and server sales.

The glitches affected HP's storage, Unix and ProLiant products, Gonzalez said.

"It's systems talking to systems," he said, declining to explain the specific problems. "It just did not quite work out."

HP disclosed the problems earlier this month when it announced its quarterly financials, blaming the problems for a $400 million revenue shortfall within the company's Enterprise System Group. HP CEO Carly Fiorina fired Peter Blackmore, executive vice president of HP's Customer Solutions Group, shortly after the problems were disclosed, saying his group's performance was "unacceptable."

Company executives at the show stressed that the majority of problems with the system had now been ironed out and that customers should no longer experience delays when they order storage or Unix systems.

ProLiant ordering is "pretty much back on track with the exception of a couple of complex, configure-to-order-type things," Gonzalez said. "By the end of August, we should be totally squared away, but the worst is behind us."

HP ships approximately 163,000 ProLiant systems per month. The vast majority of those systems are not customer configured and, therefore, not affected by the continuing problems with the system, Gonzalez said.

The ordering problems were briefly addressed during a panel discussion at HP World, when an audience member asked Joe Nadler, director of HP's business critical systems, America, about the reliability of system ship dates provided by the current system.

McMillan is a correspondent with the IDG News Service.

Cisco

continued from page 19

"We wanted to get IOS onto many new platforms and adopt it to all different kinds of processors," McNealis says. "IOS was being stretched in many different ways. In some sense we had been pushing the envelope."

This led to the now infamous "feature bloat" associated with IOS, where a single software image can include everything from X.25 and ISDN support to VoIP and firewall capabilities.

Instead of making a new IOS from scratch, or adopting an open source platform such as Linux or FreeBSD, McNealis says Cisco chose a third-party microkernel for the new IOS QNX.

"We realized the core competency of our software division was in the IP service's functionality ... we were not fundamentally operating system experts," he says.

The current IOS software includes millions of lines of code, according to McNealis, but the QNX-based microkernel in IOS-XR has only 80,000 lines.

"That compiles very nicely and lends itself to a variety of smaller form factors," McNealis says. The fact that IOS-XR is a closed system built from scratch also means the code will be less susceptible to backdoor intrusions or vulnerabilities now associated with IOS, he adds.

Besides routers and switches, IOS touches most of the advanced technology areas Cisco has entered in the last five years, such as security, VoIP, storage, wireless and optical, says Sangeeta Anand, vice president of product marketing for IOS. She says a shift to a modular-based IOS architecture in corporations won't cause any drastic changes in how a business IP network operates.

"[Customers] want a commonality of IP services," Anand says. "The fact that an underlying operating system is Linux-based or QNX-based is quite secondary to them."

Some users say the software architecture of their routers is a concern.

> **"The key to the next-generation IOS is new hardware."**
>
> **Frank Dzubeck**
> President, Communications Network Architects

"My biggest apprehension around IOS is feature bloat," says Scott Pinkerton, network solutions manager for Argonne National Laboratory, a U.S. Department of Energy Research center near Chicago. He says he's seen IOS code over the years grow to support "the A to Z set of hardware devices" Cisco offers.

"I really don't use Cisco [products] A to Z," Pinkerton says, "so having all those features just isn't that darn impressive to me."

One analyst closely watching IOS development says a modular IOS holds great promise for corporations but also holds challenges.

"The key to the next-generation IOS is new hardware," says Frank Dzubeck, president of Communications Network Architects, an industry analysis firm. "This software will not work with the older hardware."

As Cisco begins to trickle down IOS-XR-like capabilities to corporations, new router and switch platforms probably will be required, Dzubeck says. But the new capabilities of a modular IOS, where services run like applications on top of a kernel, also could lead to new levels of network reliability and new features.

"You can expect Cisco to get more and more focused on moving up the stack," Dzubeck says. "And the platform of choice for them will be IOS."

With firewalling, intrusion detection, caching and VoIP already staple features of IOS, new features such as route control or border session control easily could run as services on top of a new modular IOS kernel.

However, corporations will have to weigh the benefits of what a new IOS would bring vs. keeping an installed base of working Cisco hardware and software.

"This is one of those strategic juncture points that happens every 10 years or so," Dzubeck says. "Mainframes went through this. Even Microsoft went through this," when it went from DOS to Windows 95 to 2000.

While a new IOS for corporations might introduce fresh bugs and a new learning curve, it would be worth it, Argonne's Pinkerton says. ■

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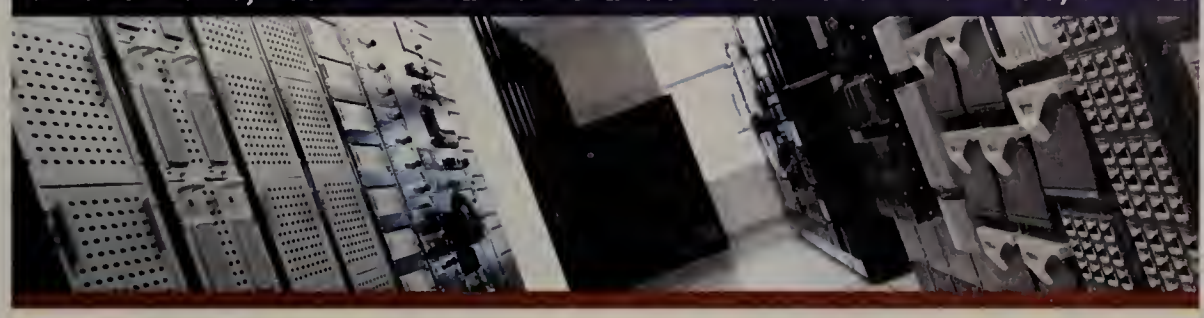

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MONDAY, OCTOBER 25

9:30am to 10:25am

INDUSTRY PRIMER TRACK
Addressing High Density Cooling of Storage Networking Equipment at the Facility Level
Donald Beaty, Founder & President, DLB Associates

INDUSTRY PRIMER TRACK
Storage Basics and Trends
Dennis Martin, Senior Analyst, and Greg Schulz, Senior Analyst, Evaluator Group

CAREER DEVELOPMENT TRACK
Power Statements, Questions and Answers Techniques
Howard Goldstein, Founder, Howard Goldstein Associates, Inc.

10:35am to 11:30am

Role of Server Blades and Virtualization in Next Generation Data Center
Arun Taneja, Founder and Consulting Analyst, Taneja Group

Why Tape Continues to Make the Grade
Richard Harada, President, Tape Technology Council

11:30am to 1:00pm Luncheon

Afternoon

SNIA Tutorial Sessions
1:00pm to 6:40pm

- Data Lifecycle
- Virtualization & Securing Your Storage
- Focus on Networking Your Storage
- Focus on Storage
- SAN Management
- Voice of the User

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IDC Briefing Session
1:00pm to 4:00pm

IDC

In this fast-paced session, IDC's top storage analysts will examine companies' growing interest in deploying tiered storage solutions and assess its impact on storage components, systems, networks, management and services.

IT End-User Golf Outing
noon to approximately 6:00pm

The pre-conference golf outing at the Ritz-Carlton Golf Club located adjacent to the JW Marriott Grande Lakes Resort is complimentary (a $125 value) for registered IT end-users. (Other participants, including sponsors and vendor representatives, may play on an "as available" basis and are responsible for all applicable golf outing expenses.)

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TUESDAY, OCTOBER 26 *General Sessions Begin*

8:30am to 9:15am — **Don Tapscott, Renowned Bestselling Author of *The Naked Corporation*, *Growing Up Digital* and *Paradigm Shift***

9:15am to 9:45am — **The Future of Knowledge Management**
John Halamka, MD, CIO, CareGroup Health System and Harvard Medical School

9:45am to 10:15am — **Kevin Rollins, President & COO, Dell**

10:30am to 11:00am — **Keith Glennan, VP & CIO, Northrop Grumman IT**

11:00am to 11:30am — **Elevating the Art of Storage**
Shinjiro Iwata, CEO, Hitachi Data Systems

11:30am to noon — **Industry Presidents' Roundtable: A Market Outlook**
Moderator: Don Tapscott, Author of *The Naked Corporation*, *Growing Up Digital* and *Paradigm Shift*

12:15pm to 1:30pm — **CONCURRENT LUNCHEON SESSIONS**

- **General Networking Luncheon** — On the Valencia Lawn
- **Luncheon Session** — Steve Duplessie, Founder & Senior Analyst, Enterprise Storage Group
- **Luncheon Session: Measuring the Value of IT Investments** — Richard Sneider, Managing Partner, InterUnity Group

1:30pm to 2:00pm — **End User Case Study: Best Practices: Data Center Consolidation**
David Cohen, VP, Technology Architecture Group, Merrill Lynch

2:00pm to 2:30pm — **Greg Reyes, Chairman & CEO, Brocade Communications Systems**

2:30pm to 3:00pm — **End User Case Study: Evaluating Options for Business Continuity/Disaster Recovery Plans**
Rod Mueller, Manager of Technology and Infrastructure, International Paper

3:00pm to 3:45pm — **CTO Insights Panel**
Moderator: Jon William Toigo, CEO & Founder, Toigo Partners International

4:00pm to 5:30pm — **CONCURRENT SESSIONS**

5:30pm to 8:30pm — Expo with Dinner / Interoperability & Solutions Demo Open

Interoperability & Solutions DEMO 5:30pm to 8:30pm

WEDNESDAY, OCTOBER 27

8:30am to 9:15am — **Nick Carr, former Executive Editor of the Harvard Business Review and author of *Does IT Matter?***

9:15am to 9:45am — **End User Case Study**

9:45am to 10:15am — **Industry Leader Presentation**

10:30am to 11:00am — **End User Case Study: Realizing the Vision of Management Simplicity and Improved Business Processes in a Demanding, Distributed, High-Performance Environment**
Michael Prince, VP & CIO, Burlington Coat Factory

11:00am to 11:30am — **The Half-Life of Storage Trends**
Peter van Oppen, Chairman & CEO, ADIC

11:30am to 12:15pm — **Panel: End Users Speak Out**
Moderator: John Dix, Editor in Chief, Network World

12:15pm to 1:45pm — Expo & Luncheon

1:45pm to 2:15pm — **End User Case Study**

2:15pm to 2:45pm — **Industry Leader Presentation**

2:45pm to 3:30pm — **Analyst Roundtable Panel**
Moderator: Jon William Toigo, CEO & Founder, Toigo Partners International

3:45pm to 5:15pm — **CONCURRENT SESSIONS**

5:15pm to 7:15pm — Expo and Reception

7:30pm to 9:00pm — Gala Evening, Dinner and Entertainment

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12:15pm to 7:15pm

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THURSDAY, OCTOBER 28

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8:30am to Noon — **CONCURRENT TECHNICAL & BUSINESS TUTORIALS**

Noon — Conference Concludes

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Chief Technology Integration Officer
Public Broadcasting Service

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Director, IT Infrastructure
Pacific Gas & Electric

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* IT End-Users are defined as those who are attending Storage Networking World with an intent (and an IT spending budget) to potentially buy/lease hardware/software/services, etc. from our conference sponsors and are not themselves an IT vendor. As such, account representatives, business development personnel, analysts, consultants and anyone else attending who does not have IT purchasing influence within their organization are excluded from the "IT End-User" designation. Interpretation and enforcement of this policy are at the sole discretion of Computerwo

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- ❑ Other IS/IT Department Manager/Supervisor
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- ❑ CFO/Controller/Treasurer (Channel/Integrator/Consultants Only)
- ❑ VP/GM/Director (Channel/Integrator/Consultants Only)
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Microsoft's NAP partners eye first steps

Company's Network Access Protection plan requires lots of third-party buy-in.

BY TIM GREENE

While there is much ballyhoo about the Microsoft initiative to protect networks from infected machines, customers looking to take advantage of the company's Network Access Protection architecture will have to wait for its partners to step up before it becomes a broad security tool.

NAP ultimately will supply the means to check whether computers trying to gain access to networks are configured in compliance with security policies. The larger scheme is to create a platform that lets servers, switches, routers, desktops, gateways, firewalls and security software create a broad security infrastructure, Microsoft says.

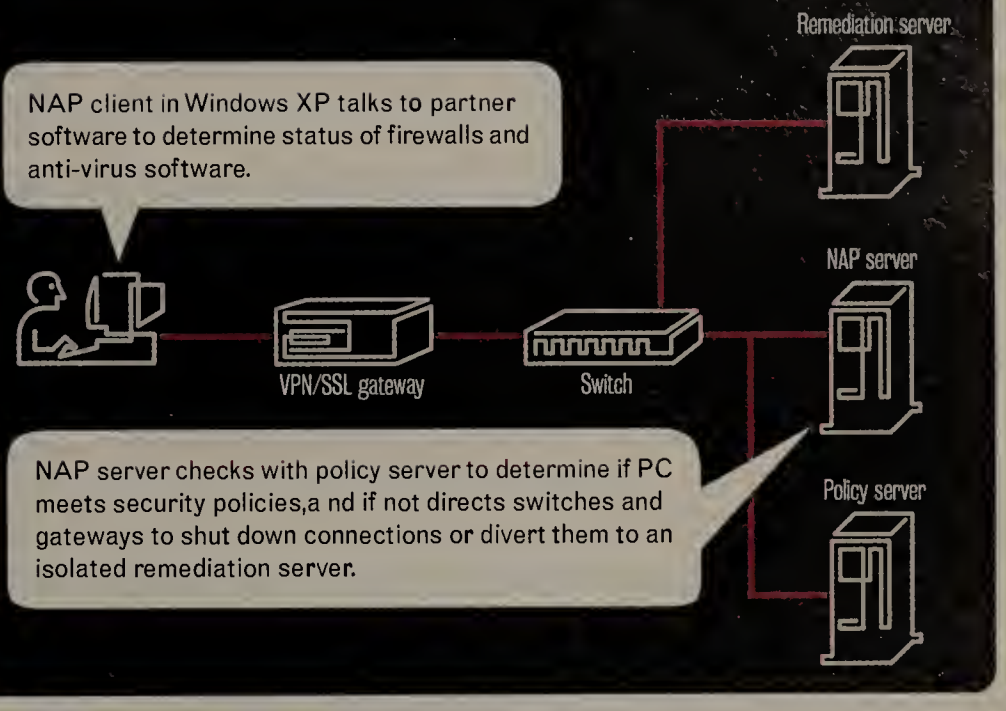
"Today none of those entities work together in terms of security," says Siva Ananmaly, vice president of engineering for Extreme Networks, a NAP partner. "They connect to one another but they really don't do anything to cooperate with one another in terms of securing the network."

NAP is a policy enforcement platform built into Windows XP clients and Windows 2003 Server that can restrict clients from accessing networks until they prove they are compliant with network security policies. XP clients report on PC configuration, and Windows 2003 Server checks whether configurations meet policies. If not, the server can direct the PC to a restricted network segment to get the updates it needs to comply (see graphic).

See NAP, page 22

NAP relies on partners

As computers seek access to corporate networks, Microsoft's Network Accesss Protection checks whether they comply with security policies, and if not, are barred or sent to a remediation server where updates bring them into compliance. Microsoft partners will integrate their gear with NAP.



Short Takes

■ **McAfee** is buying **Foundstone** for $86 million. The acquisition will add Foundstone's line of vulnerability management software to McAfee's growing list of security products. McAfee plans to combine Foundstone's technology for spotting and remediating software vulnerabilities with its intrusion-detection and security policy management products, allowing companies to identify and shield high-priority computer assets from attack. McAfee's purchase of Foundstone follows moves in the last year to focus its product offerings and improve its standing in the intrusion detection and prevention market. In April 2003, McAfee, formerly Network Associates, paid $220 million to purchase IntruVert Networks and Entercept Security Technologies.

■ **Vidius,** which makes the **PortAuthority** product for monitoring and blocking sensitive e-mail and files from unauthorized outbound transmission to the Internet, last week announced the third version of its gateway. PortAuthority Version 3.0, which costs $35 per user with $7,500 for a server license, now can route suspicious traffic to third-party products for secure storage. The product also can ensure sensitive information, including Social Security numbers and credit card numbers, aren't leaked out even if reformatted or moved into other files or messages.

Symantec offers patching help

Software designed to help SMBs deal with Microsoft vulnerabilities.

BY PAUL ROBERTS

Symantec last week announced a patch management product that it says will let users more effectively stay on top of software vulnerabilities.

Symantec ON iPatch Version 1.1 is Microsoft Windows-based software that can scan a computer network for Windows machines, determine which software patches those machines have installed and automatically download and install missing patches on machines that need them, the company says.

Symantec acquired the iPatch technology when it bought ON Technology for $100 million in October 2003. The patching tool was previously sold only with the Symantec ON iCommand configuration management product.

The company decided to break out the patching component so it could target companies with fewer than 2,000 employees that might not be interested in the full iCommand suite, says Thom Bailey, director of product management in Symantec's enterprise administration business unit.

"These are companies that don't have the staff, the time or the large infrastructure in place to couple patch management with other technology," Bailey says.

ON iPatch is a software-only product that can run on Windows 2000, XP or Server 2003 machines. The product can analyze the software patch status of Windows machines but not those using other operating systems. Links in the product connect customers to Microsoft's patch-distribution Web site, from which the patch can be downloaded and installed.

"We wanted to really focus on Microsoft because that's where the majority of pain is in patch management in smaller shops," he says.

Support for other operating systems is possible in future iPatch releases, as are features that would let companies test patches before deployment and link iPatch to Symantec's Drive Image disk back-up product, he says.

ON iPatch uses a scanning engine developed by a patch management technology company Shavlik Technologies to determine the patch status of machines it scans.

The patch management product pricing starts at $23.80 per seat for 10 to 24 seats. A license that covers up to 1,000 seats costs about $19 per seat, Bailey says.

Roberts is a correspondent with the IDG News Service.

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'NET INSIDER

Scott Bradner

Faster than you need is not fast enough

There is something in a standards organization that abhors a limit. The latest example is the work underway in the IEEE 802.11n project.

There is a lot of wrangling to go yet but the goals of the project are impressive enough. The High Throughput Study Group (802.11n) (see www.nwfusion.com, DocFinder: 3428) was authorized by the IEEE about a year ago to define a new version of the wildly popular 802.11 wireless LAN standard that could run at twice (or more) the speed of the 54M bit/sec 802.11a/g standards. (The formation document for the study group — see DocFinder: 3429 — and the project criteria — DocFinder: 3430 — are available on the IEEE Web site.)

The presentations to explain individual proposals for technology to meet the criteria were due mid-August. Last June more than 60 people had indicated that they intended to make presentations about full or partial proposals, but I've not seen how many submitted presentations.

Two groups seem to have decided that PR campaigns might help their chances when it comes to getting their proposals adopted. The first group, Task Group n, which is calling its proposal TGn Sync, includes Agere Systems, Atheros, Intel, Nokia, Philips and Sony. There is a white paper on the TGn Sync proposal at (see DocFinder: 3431). The other group calls its proposal WWiSE, which stands for World-Wide Spectrum Efficiency. The WWiSE group includes Airgo, Bermai, Broadcom, Conexant, STMicro and Texas Instruments and has a Web site at www.wwise.org.

The name of the second proposal alludes to one of the differences between them — the WWiSE proposal uses 20-MHz channels, which are supported in all countries and the TGn Sync proposal uses 40-MHz channels, which are not supported in Japan but can back off to 20-MHz channels. Both proposals include modes that are compatible with 802.11a/b/g and other modes that support 500M bit/sec or faster data rates.

One hopes these two groups can work together, along with some subset of the other proposers, to come up with one standard within a reasonable time period.

The WWiSE group is taking an interesting tact by offering, with some specific conditions, to license the technology in their proposal royalty-free to companies implementing the resulting IEEE standard (assuming their proposal becomes the standard). This might look better than it is because these days it's unlikely that the members of any particular group will own or control all the patents that lawyers somewhere will apply to a standard. Just to make the intellectual property rights games more interesting, there is no reason to think that all the companies that might decide to assert patent rights in the future are currently participating in the IEEE discussions where they might have to disclose such patents or patent applications.

I'm sure that bandwidth-wasting applications will be developed (like the memory-wasting applications so popular for PCs these days) that will make use of the data rates that 802.11n will enable. But in the meantime, I can get the same vicarious thrill with wireless as I do now with my Gigabit Ethernet-equipped laptop plugged into my home Gigabit Ethernet LAN and connected to my rather non-gigabit cable modem.

I'm sure there are theoretical and practical limits to the data rates that can be teased out of this type of technology but, using history as a guide, I wouldn't want to bet on what the standards will include 10 years from now.

Disclaimer: Part of Harvard's job is the testing of perceived theoretical and practical limits on all sorts of things, but I didn't ask about this particular one, thus the above opinion is mine.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sob.com.

NAP

continued from page 21

Announced last month, NAP is due out sometime next year and has more than 20 vendors signed on as partners, including hardware vendors Enterasys, Extreme, Foundry Networks, ProCurve (HP) and Juniper, as well as a range of software makers.

That's all Microsoft will reveal about NAP, but its partners have hopes that it can be used as a platform to bind their products to those of other vendors with the aim of making networks more secure.

For example, with NAP in place it could become possible for an Extreme Black Diamond 10K switch that detects a radical jump in traffic from a specific desktop to check whether that behavior should be blocked, allowed or monitored further to determine if it represents a threat, Ananmaly says. These are decisions a switch or router cannot make alone.

A policy server — either Microsoft's or some other vendor's — consulted by the NAP server could issue orders for the network to take whatever action the policy specifies. "This is where integration with NAP becomes only a way to effectively implement policy because policy can mean a wide range of outcomes," he says.

To support NAP, vendors are writing links to Microsoft NAP server and NAP client software so they can share information and to take instructions from other network elements as coordinated through the NAP server.

Alternatives to NAP include Cisco's proprietary network admission control, and a similar plan from the Trusted Computing Group would result in an open architecture relying on the IEEE standard 802.1X. NAP, too, would be open to all vendors.

> **"The benefit of NAP is we can get away from isolated islands of vendors."**
>
> **Andrew Harding**
> Director of product management, Juniper

Initially, NAP promises more modest goals of quarantining traffic from computers that are trying to access networks but whose configuration fails to meet security policies.

At this point, hardware vendors can work with Microsoft to make their gear interoperable with NAP, says Doug Patteson, manager of secure networks certification program for Enterasys. "What we want to make sure is that we can add value to NAP and tie it into our policy-based Secure Network Solution."

For example, if a computer meets network security policies checked by NAP but nevertheless carriers a worm or Trojan, it could clog the network with malicious traffic. We've got some ability to have a back-up solution should that kind of attack occur," Patteson says. "We'd have a second level of defense in the network fabric — shut off a switch port, for instance."

Juniper, another NAP partner, likely will tie its Secure Sockets Layer (SSL) remote-access gear into the Microsoft scheme. Using the NAP capability to check whether a remote machine is compliant, the SSL gear could determine whether to allow or restrict its access via its Instant Virtual Extranet SSL gateway, says Matt Palmer, Juniper's senior manager of strategy and corporate development.

Future enhancements are possible, he says but he would not specify what they might be. "NAP gives us an API to write to on the desktop," so the company could integrate its gateways with other vendors' endpoint security software, he says.

"The benefit of NAP is we can get away from isolated islands of vendors," whose gear might perform well on its own but is not easily brought into an overarching security plan, says Andrew Harding, Juniper's director of product management. "Rather than assign single tasks for each vendor's equipment, you can reconcile a policy across the network," he says.

Check Point is not a NAP partner, but it says an open policy enforcement platform is a good idea, citing its own efforts to use the 802.1X standard to link its endpoint checking Integrity SecureClient software to switches and routers made by Cisco, Enterasys, Extreme and Foundry.

"It's undesirable to replace a good and open standard on switches for something that won't be available for a few years," says Chad Harrington, director of enterprise products for Check Point.

Accepting NAP could present software vendors with a new, formidable competitor, namely Microsoft, says Jon Oltsik, senior analyst for information security at Enterprise Strategy Group. Once Microsoft establishes credible security software that is bundled in its client and server software at no extra cost, even its software partners might be threatened, he says. "If Microsoft comes out with comparable feature functionality, then economy wins out," he says.

Switch/router vendor Nortel is not on the list of partners but says it is in negotiations with Microsoft to join the NAP alliance. Beyond ensuring interoperability, the company will see whether some of its technology can benefit from the endpoint security NAP promises, a Nortel spokesman says. "We're at the start of the process rather than at the end," the spokesman says.

Joining NAP would be in character with Nortel's past practices. The company already teams with Check Point by running its Firewall-1 software on Nortel Alteon switches. It also already has addressed endpoint security with Tunnel Guard, software that denies VPN access to machines that fail to meet security policies.

At least part of Nortel's interest is based on Windows large presence in business networks and the desire to fit in with whatever technologies are pervasive in those networks. "Microsoft's got quite a base out there," the spokesman says.

Whether NAP or some other scheme wins out as the standard way to enforce security policies across heterogeneous networks, such standards are needed to best protect corporate networks, Juniper's Harding says. "Vendors should do the work to make products interoperable. Network security ought to just work." ■

More online!

In this *Network World* Webcast, Johna Till Johnson, founder of Nemertes Research, offers practical advice for structuring what's being called "The New Data Center."

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Carrier group seeks fee overhaul

Yearlong effort results in plan for carrier compensation reform.

■ BY JIM DUFFY

A group of carriers is lobbying the FCC to overhaul the way service providers are compensated for completing calls originating on competitors' networks.

The Intercarrier Compensation Forum (ICF), led by AT&T, MCI, Sprint and SBC, last week proposed a reform of disparate inter-carrier compensation arrangements they claim "harms consumers and creates artificial regulatory advantages for certain carriers and technologies." The group says its plan seeks to revamp the system to preserve competition, facilitate deployment of new technologies and advance consumer interests.

The ICF also includes General Communication, Global Crossing North America, Iowa Telecom, Level 3 and Valor Telecommunications. The group once included at least 25 carriers participating at various stages throughout a yearlong effort to craft the new compensation plan. Verizon and BellSouth were among those 25, but they left the group in May when they could not fully endorse the compensation plan as it was at that time.

Both carriers are mulling the latest effort.

"We have not had time to parcel through it, to see how far it has or has not come since May," a BellSouth spokesman says.

Verizon thought the May plan was too comprehensive.

"A better approach is to back up and take bite-size chunks" of the problem, as in addressing VoIP separately, then universal service, a Verizon spokesman says.

Verizon agrees that the system needs to be fixed. According to the ICF, the system harms consumers by forcing carriers to make arbitrary distinctions between local and long-distance services, which makes it more difficult for consumers to receive the service bundles they want.

"Jurisdictional disparities in inter-carrier compensation often make it more expensive to call across the state than across the country or around the world," the group says in an executive summary of its plan.

The current arrangement also harms universal service, the ability to fund telecom service in rural and poor areas, the group says. Some providers are able to avoid some or all of their contribution obligations, as consumers increasingly bypass interstate long-distance offerings in favor of wireless services, bundled service and information services, according to the ICF.

But the ICF's alternative is not without critics. TeleTruth, a customer advocacy organization, calls the plan a "scam" that protects carrier interests at the expense of businesses and consumers.

Still participating

Once 25-strong, the Inter-carrier Compensation Forum has only these nine members remaining:

- AT&T
- General Communication
- Global Crossing North America
- Iowa Telecom
- Level 3 Communications
- MCI
- SBC
- Sprint
- Valor Telecommunications

"Instead of getting rid of intrinsic problems, they're just raising rates," says Bruce Kushnick, chairman of TeleTruth. Kushnick, who notes the lack of consumer representation on the ICF, says it is "more of a cabal than an economic analysis" group.

If approved, the ICF plan would begin to restructure rates on July 1, 2005, and unify the network interconnection and inter-carrier compensation framework within three years. It does this by seeking to develop uniform rules that provide a framework for voluntary carrier negotiations and establish default responsibilities in the absence of any carrier agreement.

The network interconnection rules also are designed to protect universal service in rural regions by establishing modified default rules to apply to networks operated by a Covered Rural Telephone Company.

Under the ICF plan, all inter-carrier compensation begins a four-step, three-year transition on July 1, 2005, to a uniform system with a single termination rate of $0.000175 per minute for all traffic. On July 1, 2010, the rate is reduced to zero. ■

Short Takes

■ **WilTel Communications** last week announced two **Managed CPE** services for dedicated Internet access and IP VPN customers. The Managed CPE services come in two flavors: equipment management and monitoring, or monitor-only service. The service is designed specifically around monitoring Cisco routers, although WilTel says it will manage other vendors' gear if a customer already has that deployed. WilTel is teaming with outsourcer SevenSpace to support the service. SevenSpace, in nearly all cases, will handle the CPE management and monitoring for all WilTel customers.

Infonet beats hot-spot expectations

■ BY DENISE PAPPALARDO

Infonet Services announced last week that it has exceeded its planned number of hot spots deployed for the year by 2,000 locations.

The multinational service provider said earlier this year that it expected to have 10,000 hot spots on its network by year-end. The carrier has 12,000 worldwide and says it will double that number by the end of 2005.

More users have come to expect broadband access in their homes, work places or while on the road, says Keith Waryas, research manager for wireless business network services at IDC. "Dialup is not practical if you have to send or download a 4-, 5- or 10-megabit PowerPoint file," he says.

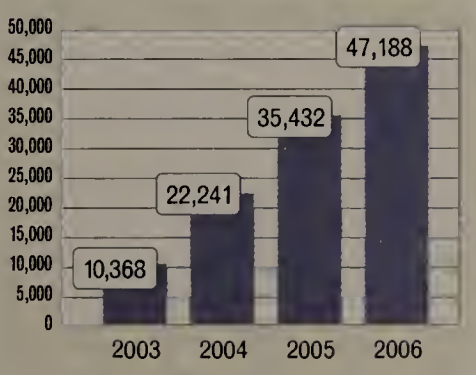
As Wi-Fi becomes more widely deployed it is becoming one of the easier broadband technologies to use, Waryas says. As more venues support Wi-Fi, it will become more predictable for business users.

Infonet is teaming with 15 wireless ISPs and aggregators to make up its network of wireless LAN access points. The three largest partners include Boingo Wireless, GoRemote (formerly Gric Communications) and Togewanet, a Swiss company.

The service provider also has deployed its own hot spots in about 20 countries and plans to deploy additional access points in the Asia-Pacific region. Infonet says it has decided to deploy some of its own hot spots to increase its Wi-Fi coverage to specifically address customer requirements.

No slowing down

IDC predicts a substantial jump in the number of hot spots deployed around the U.S.



While these Infonet-deployed hot spots are there to meet their customer's needs, the carrier says an added benefit is that it has more control over these network connections making it easier to offer service-level agreements (SLA). Service providers have yet to offer standard performance SLAs with Wi-Fi services, but IDC's Waryas says the guarantees might be available soon. Service providers are gaining more experience with Wi-Fi, and they are starting to learn network thresholds, he says.

Infonet offers Wi-Fi service as part of its MobileXpress remote access service package. MobileXpress lets customers securely access the Internet from 120 countries.

The service provider says it plans to offer mobile wireless support for its MobileXpress customers. Infonet says it will support wireless data services based on Code Division Multiple Access 2000 1x Evolution Data Optimized, General Packet Radio Service and other 3G technologies. ■

EYE ON THE CARRIERS

Johna Till Johnson

Depends on what the definition of WAS is

You've been hearing a lot lately about wide-area storage. At the Network World Technology Tours on next-generation data center technology, I joked that the best place to locate a back-up facility is in South Dakota — unless, of course, your primary data center is already in South Dakota, in which case your back-up facility should be in North Dakota.

As I said, it was a joke — but WAS provides plenty of serious benefits. It lets companies protect data by storing it offsite in a location that's less likely than many headquarters to be a target for terrorists, hurricanes or earthquakes. It also provides the opportunity to house data in lower-cost real estate, leaving higher-cost real estate for locations in which humans need to interact. In short, WAS holds the promise of becoming a lynchpin of corporate information stewardship strategies.

As noted a few weeks ago, effective information stewardship requires understanding how to secure information and how to back it up and retrieve it efficiently — which typically involves mastering storage network technologies. That means understanding the unique constraints that storage places on the network.

Specifically, the network must deliver exceedingly low packet losses (less than 1%, according to research done at CNT); exceedingly low latencies (close to the speed of light in fiber, which is roughly 30 millisec across North America), and very high bandwidths (multigigabit speeds aren't uncommon).

Obviously the degree to which these constraints apply depends on how the remote storage is being used. Archiving imposes fewer constraints than, say, real-time disk access. Working around these limitations is what gives rise to the entire concept of information life-cycle management, whose fundamental idea is that you store information where you can most effectively (and cost effectively) get at it. Archival data, which is rarely if ever looked at, can be stored on tape. Data that's part of an active database needs to reside on disk — and if you're interested in having that data instantly available in case of an outage, it needs to be updated in real time.

In the old days — three to five years ago — many companies deployed Fibre Channel-over-SONET solutions for WAS. These days, though, the trend is toward IP, and in particular toward solutions that leverage existing IP networks to provide real-time access to data.

That's the vision behind the so-called wide-area file services (WAFS) arena, the newest entry in the WAS market. These boxes essentially cache data securely to provide real-time performance for remote data access. Examples include Cisco, which recently acquired Actona, one of the next-generation WAFS solutions; Signiant, which inked an OEM deal with EMC; and Tacit, which partners with IBM Europe. Other players include Disksites and Riverbed Technology. WAFS doesn't provide much redundancy, but these products make it possible to access a remote data center as though it were local.

There's a lot happening in this area — and it will continue to evolve.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

Special Focus

BPL: Cheaper, simpler . . . viable?

Broadband over power lines gaining steam

■ BY JENNIFER MEARS

In Manassas, Va., residents and businesses have a third option for broadband Internet access, and it comes at a lower price and without the installation fee and long-term commitment of DSL and cable. What's more, it's delivered over electrical wires, meaning everyone soon will have access to high-speed Internet without availability limitations that plague other technologies.

"We've got a couple hundred users today that are using the BPL [broadband over power line] service, and we've got about 1,200 on a waiting list," says John Hewa, assistant director, electric utility, for the city. We think around the end of the year or the beginning of 2005, we'll have the service available anywhere in the city."

In January, Manassas, a city of about 36,000 people, turned an 18-month field trial into a commercial offering. It's one of four utilities — including Cynergy in Cincinnati, Pennsylvania Power & Light, and Central Virginia Coop — that have rolled out commercial BPL this year.

While 2004 didn't turn into quite the rush to embrace BPL services that industry observers predicted last year, there continues to be momentum around the technology. Providers say BPL throughput can range from 300K to 2M bit/sec, about the same as cable and DSL, but that they can provide the service at a less-expensive rate.

Manassas, for example, offers its BPL for $26.95 per month with no installation fee and no long-term contract. Hewa says cable service in Manassas could be as much as $55 per month without a bundled package that includes cable television service, and DSL averages about $30 per month. Cable, and DSL also charge installation fees and require long-term contracts, Hewa says.

The primary benefit of BPL, however, is that it can be delivered over existing infrastructure: any site with power outlets can be hooked up to a high-speed broadband connection. That has attracted the attention of high-level officials, including FCC Chairman Michael Powell and President George Bush, who has called for nationwide broadband access by 2007.

"One great opportunity [to get broadband to more consumers] is to spread broadband throughout America via our power lines," Bush said during a speech at the Department of Commerce in June.

But hurdles remain — such as setting standards and opposition from groups such as amateur radio enthusiasts who say the technology causes too much radio interference. Analysts are also lukewarm about BPL's prospects for taking significant market share from DSL and cable. They note that cable and DSL have matured to provide more than a single "big pipe," bundling other services into their offerings. That's something BPL also will have to do.

"We're in the camp of 'We're going to believe it when we see it,'" says Matt Davis, director of broadband access technologies at The Yankee Group. "The more technologies and the more choices in the marketplace, the better. It keeps everybody innovating. But it's going to be tough. To tell you the truth, if utilities are really going to get into driving telecom services it likely will be through fiber."

Nevertheless, the continuing maturity of BPL and a growing number of positive experiences with field trials, along with government support, is helping spur interest.

Last year, for example, there were about a dozen utilities conducting field trials, but no commercial deployments. This year, in addition to the four commercial ventures, the number of field trials has increased to more than 36.

ISPs that quietly watched the trials last year are now getting into the game. EarthLink, for example, is partnering with Progress Energy to deliver BPL in a field trial outside of Raleigh, N.C. EarthLink also has been working with Consolidated Edison in New York to deliver BPL on a trial basis for about two years. Last month, AT&T announced it was working with Pacific Gas and Electric to conduct a trial with about 100 residents in Menlo Park, Calif.

"There is general acceptance now that broadband over power line is here to stay. Most people agree it's going to happen and that it's a good thing," says Alan Shark, president of the Power Line Communications Association. "It's gotten off the drawing board. You are seeing deployments."

Research firm Chartwell, which tracks the energy industry, says the percentage of utilities — gas, water and electric — planning or considering broadband deployments rose from 6% in 2000 to 20% in 2003. Of 100 electric utilities Chartwell surveyed, a third said they were using, planning or considering broadband last year.

BPL is a last-mile technology that injects data handed off from a backhaul line, such as fiber-optic or fixed wireless, into medium-voltage power lines. Companies such as Ambient, Amperion, Current Technologies and Main.net have developed technology to do that.

The technology providers have their greatest variance when the data signals reach the transformer that converts medium volts into the low volts that are sent into homes and businesses. Amperion, for example, avoids the transformer and low-voltage lines altogether, using Wi-Fi to go directly into the homes. The others go through the transformer or around it, sending IP packets into the home along the low-voltage lines.

The data is accessed via a standard HomePlug-certified device or a proprietary device that plugs into a wall.

Utilities are still grappling with the business issues of becoming a broadband wholesaler — in most cases they are not interested in distributing the service themselves and instead are working with third-party service providers. Manassas, for example, is partnering with broadband provider Communication Technologies.

"The utility companies that conducted the trials initially were asking the question, 'Does it work?'" says Brett Kilbourne, director of regulatory services for the United Telecom Council, an IT trade association for electric, gas and other critical infrastructure firms. "The question now is, 'Can we deploy it economically?'"

Another issue that might be holding things up is that rules and standards are still pending. This fall, the FCC is expected to finalize rules it proposed earlier this year regarding BPL. As for standards, the IEEE has formed a committee to create hardware and safety standards for BPL. While Kilbourne notes that many utilities might be waiting for the FCC to finalize rules before making serious bets on BPL, standards probably won't make that much of a difference just yet.

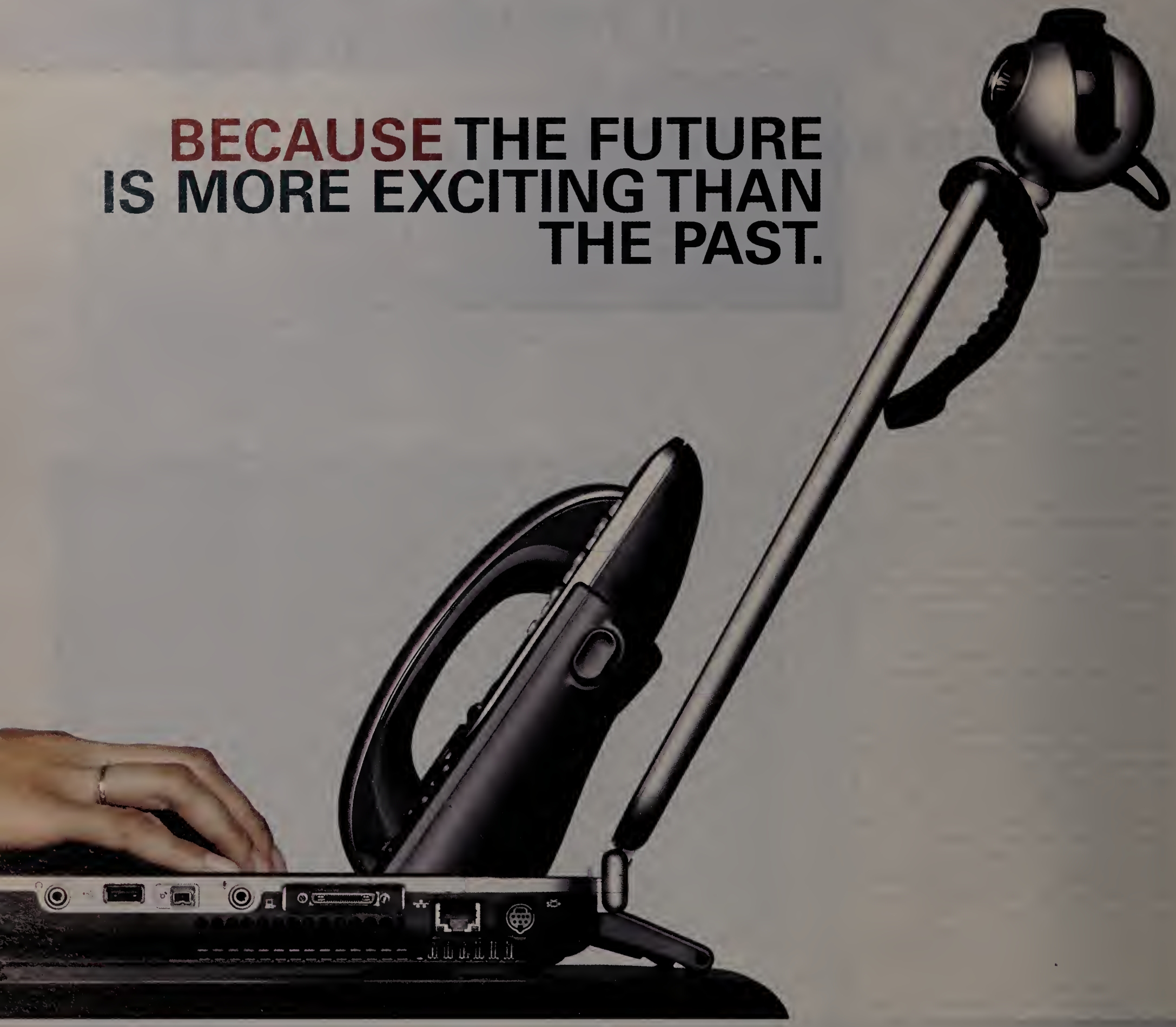
The IEEE says it likely will be 2006 before any standards are settled on. Once standards are set, it will help drive down prices by removing the proprietary nature of existing hardware technologies, analysts say.

As for existing obstacles, the FCC is proposing rules aimed at mitigating problems, including requiring that BPL equipment can reduce power or shift frequencies to avoid or correct interference problems. ■

Getting their feet wet

A growing number of utilities are exploring broadband over power line opportunities.

BECAUSE THE FUTURE IS MORE EXCITING THAN THE PAST.



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Editorial supplement

NetworkWorld

August 23, 2004

The New Data Center

5th in a six-part series

Rethinking networked IT

SPOTLIGHT ON WIRELESS

The need for widespread mobility marks today's most strategic businesses. Inside, discover how to make wireless part of your new data center architecture.

PLUS: 7 ways to slash costs using new data center technologies

Do-it-yourself disaster recovery—new data center style

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AN EDITORIAL SUPPLEMENT TO NETWORK WORLD

The New Data Center

Rethinking networked IT

In this, the fifth in a six-part series, we spotlight strategies and technologies for making wireless part of your new data center architecture.

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SPOTLIGHT ON WIRELESS

With improved devices, apps and infrastructure, wireless is making headway as a solid new data center technology. Analyst Mark Lowenstein offers a 10-point evaluation guide.

Toward the mobile enterprise, step by step

ILLUSTRATION: RICCARDO STAMPATORI

■ BY MARK LOWENSTEIN

Mobility in the enterprise has been — like wireless coverage — spotty. Too many "gotchas" have prevailed: unreliable and slow networks, deficient devices, underdeveloped billing and customer care systems, and lack of focus by the major wireless operators. These factors made for complex wireless projects involving a veritable circus of middleware, gateway and system integrator vendors. As a result, outside of BlackBerry, which counts about 1 million users worldwide, we've not seen broad adoption of wireless data in the enterprise. In fact, research shows that the global market for downloading ring tones exceeds that for enterprise wireless data services today.

But in the past two years, we've seen progress on several fronts:

• Wireless networks have improved. Coverage is better, and 2.5G networks such as General Packet Radio Service/Enhanced Data Rates for GSM Evolution and Code Division Multiple Access 1x boast always-on capability and offer speeds of one to three times that of dial-up. (How much faster depends on a number of factors, such as distance from base station and capacity loading.)

• We finally have a suite of business-class devices, across multiple operating systems. Whether phone or PDA-phone combinations, these devices support much greater memory (up to 64M byte on board, with many having some form of removable storage) and faster processors (we'll see the first 1-GHz processor on a phone by next year). Sample business-class devices include the BlackBerry, palmOne Treo (Palm OS), Samsung i700 (Microsoft Pocket PC) and Sony Ericsson P900 (Symbian).

• Wireless carriers have improved support for the enterprise. Most have dedicated support for midsize to large companies, separate care centers for data and improved billing systems. All have expanded their technical sales resources. Their security story also has evolved.

With such advancements, companies now can take wireless to the next level. Doing so requires two steps. First, you must develop a company-wide mobility strategy that includes a holistic view of wireless: voice and data, in-building as well as mobile, and including plans for WANs and wireless LANs. Second, as wireless becomes a core component of new data center plans, you must deploy wireless to a much larger group of enterprise users.

10-point evaluation framework

This 10-point framework will help you determine whether it's time to dive into enterprise mobility and how to evaluate vendor solutions:

1. Enterprise mobility requirements. We define a mobile worker as one who is away from his primary workplace at least 20% of the time. Approximately one-third of the U.S. workforce, or about 50 million users, falls into this category. Once you have determined whether an employee is a mobile worker, you need to better understand his particular wireless requirements: campus, local, regional, national, international.

2. Applications. Does the employee primarily need remote access plus mobile e-mail and personal information management — meaning access to contacts and calendar? Or does the employee need more vertically oriented solutions such as field-force automation or other applications that might require custom development or, at a minimum, some form of wireless remote access? Also consider whether the employee needs constant connection to the application or whether he can work offline and then remote access in or synchronize the data.

3. Device requirements. This does not have to be a one-size-fits-all solution. For applications with high input requirements, provide devices with qwerty keyboards or perhaps some level of voice recognition. For heavy use while driving, consider a good car kit to improve reception and provide hands-free capability. Also realize that some data-centric devices, such as the Treo and the Pocket PC, require a fair bit of two-handed use (stylus), while others such as the BlackBerry allow effective one-handed use.

Keep in mind that the pace of innovation in devices is accelerating, so make sure you have a favorable upgrade program in place. You will probably want to change phones every two years on average. Note that if you want 3G, you will need a new phone (or new PC card) when those services and devices launch (see related story, left). Also ensure that the volume discount program you negotiate will continue if new sets are purchased, as most companies don't get the same "phone is almost free" program as consumers enjoy.

4. Network requirements. Recognize that for the next three years, we still will be dealing

A look at 3G's impact

Mark Lowenstein of Mobile Ecosystems tells why 3G should bring about change to enterprise remote-access strategies.

The much-anticipated launch of 3G in North America will usher in the first stage of what I call "the mobile broadband era."

Previous improvements in WAN data speeds have been in modest increments. But 3G represents enough of a great leap forward that users should begin the process of re-thinking their remote-access strategies. Let's look at this from performance and ROI perspectives.

Performance

All sorts of variables determine the data rate a user will get in a given place, at a given time, for different applications and connectivity modes. But if we use 300K bit/sec down and 60K to 80K bit/sec (1x speeds) up as the "base case," the key issue is whether this is suitable enough for corporations. We have to ask: With such bandwidth, can they seriously consider the WAN as their default remote-access network? The answer is a qualified "yes," with the following considerations:

• Coverage. 3G coverage will not be as universal as voice or 2.5G. It initially will be focused on where businesses are concentrated and in city centers.

• Speed. The 1x speed on the uplink could be a gating factor for some users, depending on their requirements. Revision A of Evolution-Data Optimized (D-O) will lead to significant improvements in the transmit link, circa 2006, as will the high-speed downlink packet access version of Universal Mobile Telecommunications Service.

• Power management. Our tests of 3G have shown that in intensive use it cuts battery power by half, and is even hungrier than Wi-Fi.

Price and ROI

Let's use Verizon's current $80-per-month flat-rate plan in Washington, D.C., and San Diego and $150 to $250 for a PC card as the base case for 3G remote access. Can CIOs justify $1,000 per year, per user, plus an upfront equipment charge? Well, they certainly do for BlackBerry, although that is still mainly an executive tool.

To justify this expenditure, we need to think about D-O displacing some percentage of the current remote access budget. Let's admit that D-O is not comparable to fixed broadband or Wi-Fi in terms of throughput. But it is "good enough" in many situations. If D-O can displace one-third to one-half of existing remote broadband-access expenditures, then you can make the business case. But you'll have to factor in the harder-to-quantify benefits of mobility, ubiquity and convenience (one provider, one connection) as the remaining 50% of ROI. You get to 50% broadband displacement, to use simple but illustrative examples, with 20 hotel connects per year and one Wi-Fi provider relationship (at $30 per month) or with 50 broadband "connects," at $10 per connect.

Although the 3G WAN could be the default for remote access, this is not a zero-sum game with respect to Wi-Fi. 3G will not be ubiquitous and will not be able to offer users enough throughput, or other attributes of a true broadband network, in some instances. Over the next year, you should see more plans that incorporate both WAN and wireless LAN, even with common connection cards and clients.

The approach of 3G and the growing availability of Wi-Fi provide the foundation for a re-thinking of your remote-access strategy. If this happens, mobile access to applications other than e-mail will become more widespread.

— Mark Lowenstein

3G outlook

A technology-by-technology look at 3G rollouts.

Network	Data speed	Operator status
GPRS	30K to 60K bit/sec	Near complete GSM network coverage.
EDGE	75K to 150K bit/sec	• AT&T has deployed across most of network. • Cingular to launch across most of network by Q3 '04. • T-Mobile plans uncertain.
WCDMA/UMT	Up to 384K bit/sec	• AT&T to deploy minimum of four markets in '04. • Cingular intends to deploy in 2006-2007 time frame; testing this year in Atlanta.
CDMA 1x	60K to 80K bit/sec	Deployed across North American CDMA networks.
CDMA 1x EV-DO/DV	300K to 500K bit/sec	• Verizon has launched in two markets and plans to deploy nationwide by year-end 2005. • Sprint PCS to deploy in most markets over next two years.
WiDEN	60K to 80K bit/sec	Nextel plans to launch by year-end.

with what I call "mobility islands." From a WAN perspective, 2.5G will be the default network, with 3G — 1x Evolution-Data Optimized or Universal Mobile Telecommunications Service — being launched on a market-by-market basis over the next three years. Public Wi-Fi is becoming increasingly available in Tier-1 locations, although the biggest challenge here is the fragmented market structure. By early next year, we should see common connection cards, clients and even devices that support both WAN and 802.11 WLAN. For the foreseeable future, neither 3G WAN nor 802.11 will be ubiquitous, so ensure users can access critical applications over 2.5G networks in some sort of stripped-down version.

5. Corporate liability, or not? An underrecognized obstacle to larger-scale deployments is that within a given company, users are on a hodgepodge of mobile devices and service plans that they have selected personally, even if they bill back to the company. You must recognize that employees will require a choice of handsets, and even carriers, because individual preferences and network coverage will vary. Mandating a particular device and network will work only for a highly desired or mission-critical corporate application.

Another issue is that traditional boundaries between business and personal use do not exist in wireless. How will you deal with users who want to download tunes, share pictures and play games during nonbusiness hours? You need to spearhead policy development for this.

6. Support structure. Realize that the more involved the devices and applications, the greater the support requirements. Companies are all over the map in providing support to their mobile workforce. Is this something that you plan to do internally? What are your expectations from the sales/support infrastructure from your wireless operator or other solutions provider?

7. Security. Not a deal-maker, but a deal-breaker. Mobile VPN support has matured significantly and IPSec support is now a minimum requirement for enterprise deployment. We will move toward Secure Sockets Layer VPNs over the next three years. Mobile device management and security are becoming increasingly important — including access control, inventory management, intrusion protection and configuration management. At the least, make sure you can lock down BlackBerries, Palms or other devices loaded with significant amounts of corporate data (such as e-mail and address books) if they are lost or stolen.

8. Billing and account management. Although billing capabilities have improved to map to corporate needs, we still need a wave of business-to-business management tools that let IT managers better access account management and configuration.

9. Enterprise application vendors. Mobility is still not "core" to the CRM/ERP applications from the major vendors — Oracle, PeopleSoft, SAP and Siebel Systems. The approach to mobility varies significantly from one vendor to another, with some supporting an offline/sync architecture and others promoting a more connected solution. Think carefully about these two frameworks when evaluating vendors. For example, does a new sales order need immediate input, or can that wait till day's end?

10. Think about context. Users move through multiple islands of connectivity as they work and travel. So think about what can be accessed or delivered to users, depending on their "state." For example, they won't be able to download a big attachment if they are connected at dial-up speed. This is where developments in location services, presence and multimodal (such as voice recognition and text-to-speech) applications might help optimize the mobile experience.

Lowenstein is managing director of Mobile Ecosystem, a leading consulting and advisory services firm. He can be reached at mlowenstein@m-ecosystem.com.

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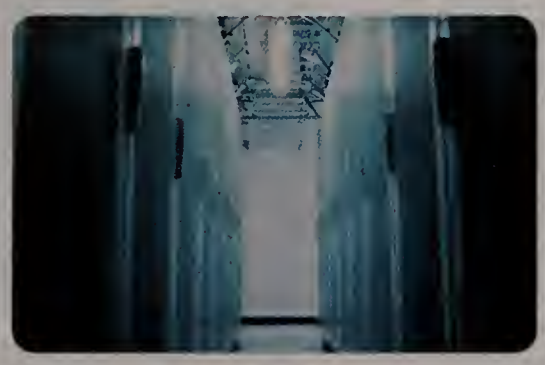

In response, more and more functions are being loaded onto servers – requiring more servers. And applications are forced to do more than they can or should. Usually with less than satisfactory results.

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SPOTLIGHT ON WIRELESS

Three early adopters tell how they've paired VoIP and WLANs as part of their new data center plans.

VoIP and WLAN—a dreamy new combo

Ron Ehlers, vice president of IS at PacSun, has found VoIP over WLAN the perfect fit for this teen retailer's new data center plans.

PHOTO: BRUCE HERSHEY

■ BY PAUL KORZENIOWSKI

Wireless LANs and VoIP are two new data center hotties gaining admirers because of the productivity improvements they offer. No surprise, then, that a growing number of companies are pairing these stars — and so far, the union is proving much stronger than J.Lo's and Ben's had been.

"Now that VoIP has proven itself to be a viable, easy-to-use technology, enterprises are searching for ways to leverage its capabilities, and one way is to run it over their WLANs," says Allen Nogee, a principal analyst with In-Stat/MDR. The research firm found only 60,000 VoIP handsets were deployed on WLANs in the U.S. in 2003, but that almost half the companies it surveyed are examining the technology for future deployment.

Pacific Sunwear of California, Condell Medical Center and the town of Ocean City, Md., are among early adopters of VoIP over WLANs. The attraction for VoIP over WLAN differs among them, but all have reaped benefits from their installations. Even call-quality issues haven't dampened their enthusiasm for the technology.

A sunny forecast

For PacSun, an Anaheim, Calif., specialty retailer of teen apparel, accessories and shoes, WLAN technology came into play as it moved into new headquarters and distribution center buildings. "Because of our rapid expansion, we have been tripling in size and outgrowing our building requirements every four years," says Ron Ehlers, vice president of IS at PacSun, which operates more than 900 stores in the U.S. "In 2002 for the first time, we had the opportunity to build the corporate offices, data center and distribution center the way we wanted. Previously, we had to fit our requirements into existing buildings."

The company went with Cisco Aironet WLAN access points in its corporate office, which has 300 users, and Symbol Technologies handheld and truck-mounted systems for its warehouse, which has about 150 employees. Initially, the 11M bit/sec 802.11b links were used only for data applications. When

See VoIP, page S8

Keeping track of assets has always been important. Now wireless networks can track devices and people.

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VoIP

continued from page S6

traveling to department meetings, corporate employees used laptops to access and analyze information, such as individual-store sales data or product pricing. In the warehouse, employees used portable scanners to examine inventory data.

The network design paid big dividends, especially in the distribution center, Ehlers says.

"In our old facility, our warehouse management system was an antiquated manual system," he says. "The new building has an automated, paperless system, and since we've been in it, we have grown by 160 stores, but our distribution center costs as a percent of sales have gone down."

Yet this bright tale came with two dark sides. Employees, especially those in the distribution center and network service center, spent a lot of time away from their desks and missed important calls. PacSun looked at various options, including wireless radio systems, walkie-talkies and cellular services. All were expensive and would have required additional infrastructure investments. The retailer had an Avaya Definity PBX, but its 802.11b option was based on a proprietary design that would have required new access points.

In sifting through his e-mail, Ehlers saw a press release from Spectralink, a vendor about which he knew nothing. The company said its products worked with major PBXs and ran over 802.11b networks, so he called. "The company's sales representatives brought the products into our conference room, unplugged a wired connection, made a few adjustments to the PBX and had a working WLAN phone in less than half an hour," says Ehlers, who has outfitted about 30 employees with the new phones.

Call quality, while initially not an issue, became the second dark side as WLAN traffic increased. "We have areas in the data center, near the network services team, and in a few conference rooms where managers are constantly working with laptops," Ehlers says. "As we placed more devices in those areas, users encountered garbled connections and dropped calls, especially when they moved from one access point to another."

After conducting a site survey, Cisco recommended increasing the number of access points from 16 to about 25. PacSun was determining where to station more access points when Ehlers came across Meru Networks, whose access points rely on proprietary technology to squeeze out more (as many as five times more) connections over a typical 802.11b LAN. Swapping out the 16 Cisco access points for the Meru gear also let the retailer deploy a guest-access capability so clients or partners can access the Internet while at the retailers' offices.

The right prescription

Product obsolescence led to a VoIP-over-WLAN deployment at Condell Medical Center, a community hospital in Libertyville, Ill., with about 200 beds and 2,700 employees. To improve patient care, the medical center provided nurses with laptop computers and wireless phones connected to an Avaya Definity PBX in 2001. Not only were the nurses able to enter patient data, such as temperatures and medication at the bedside, but doctors and nurses also could communicate more easily.

When the PBX vendor decided to drop its proprietary wireless phones for WLAN phones in 2003, the hospital decided to follow suit. However, cost was an issue: The VoIP phones cost about $700 each, and the hospital had to tack on another $200 to $300 per phone for batteries, chargers, cases and other accessories. "We decided to bundle our VoIP costs in as part of a $90 million expansion, for our emergency department, intensive care unit and a new women's center and spa," says Susan Mesmer, communications supervisor at the healthcare provider.

The hospital has about 325 nurses, technicians, transportation staff and managers working with mobile phones. When they started to work with the VoIP phones at the end of 2003, call quality became an issue.

"Nurses found intermittent jitter on lines in high traffic areas; the problems were quite clear whenever they moved from one access point to another," Mesmer says.

This year, the hospital increased the number of access points from 25 to 45 and tweaked its network so VoIP calls receive the highest priority for network bandwidth. These steps assuaged all of the call-quality concerns.

Catching the wave

The town of Ocean City, which sits on a 4-mile-by-10-mile island, found an unusual application for VoIP over WLAN: its backbone network. The municipal agency supports about 400 users in 17 diverse locations ranging from a skateboard park to a police department. In the summer of 2002, it had two telecom challenges: It needed more bandwidth for new applications, such as a Geographic Information System that would send large graphic files from user to user, and its phone systems (each agency picked its own) were inefficient.

To solve the problems, the town totally revamped its telecom framework. For its voice needs, the town selected Avaya's 8700 IP PBX and half a dozen distributed nodes that support 450 extensions, which are mainly IP phones but include a few fax modems. For the backbone network, the city put in Proxim dual-backbone 54M bit/sec WLAN radios, in a point-to-multipoint configuration with radio antennas placed on top of a series of water towers that line the island.

It selected Business Information Group, a York, Pa., reseller for the job, which was completed in April 2004. "During the evaluation process, it became clear that a few bidders planned to rely on subcontractors for the installation," says Gail Weldin, Ocean City network manager. "Because our configuration was unique, we wanted the primary contractor to take care of any installation problems directly."

Because the network supported vital voice and data transmissions, network management was important. The primary source needed to be able to supply 24-7 monitoring, but many had network operations centers that only operated from 8 a.m. to 5 p.m., Monday through Friday. And if a problem arose, the town needed technicians who could scale the water towers and tinker with the network equipment. In some cases, vendors would have made the city wait three or four days for a climber, an unacceptable timeframe.

The new system represents a $1.2 million investment, an expense the town expects to recoup in five years, Weldin says. By eliminating a few frame relay and T-1 lines, the municipal agency cut its annual telecom costs by $90,000. Employees now take care of any adds, moves and changes — tasks that Verizon previously did.

Initially, Ocean City employees encountered what Weldin termed "gobbledygook" on their connections. After some testing, the town discovered the interference problems stemmed from Verizon's T-1 line. After that line was reconfigured, the problems disappeared.

Weldin points to a three-hour conference call among three groups of engineers, including one vendor's team on the West Coast, as a measure of the network's stability.

"We loaded up the network to test its throughput, and there was not a beep, an echo or a problem the entire time. For me, that verified that VoIP-over-WLAN technology is quite stable," she says.

Korzeniowski is a freelance writer in Sudbury, Mass., specializing in technology issues. He can be reached at paulkorzen@aol.com.

> **There was not a beep, an echo or problem. . . . For me, that verified that VoIP over WLAN technology is quite stable.**
>
> **— Gail Weldin, network manager for the town of Ocean City, Md., speaking of a three-hour conference call the town conducted to test the network**

VoIP-over-WLAN deployment tips

- Find a vendor experienced in both WLANs and VoIP.
- Conduct a site survey that identifies probable WLAN voice and data users and their usage patterns.
- Place access points to achieve sufficient overlap between locations.
- Identify potentially congested areas and plan for additional access points there.
- Be prepared for jitter and call dropping when the network is first installed.
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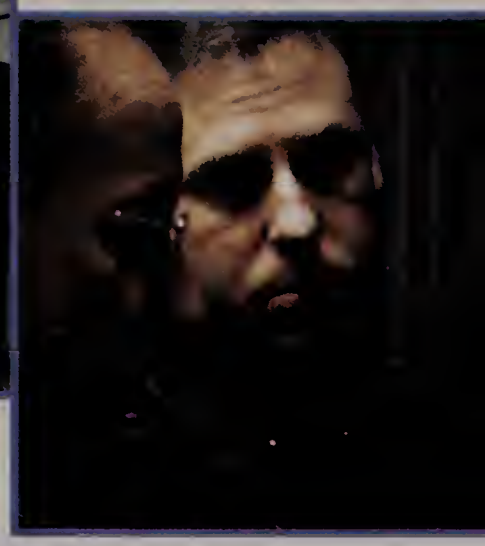

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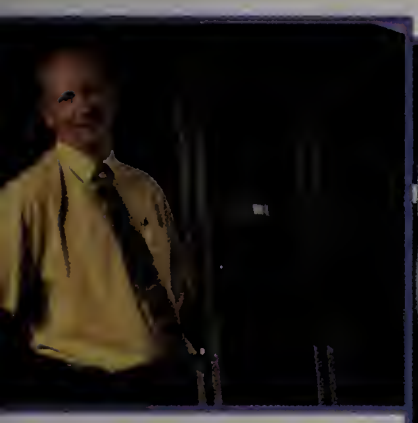

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Taking business apps on the road

... and accessing them wirelessly

Advances in wireless nets and mobile computing now make it possible to separate line-of-business applications from enterprise desktops.

The Bekins Company is driving major gains in efficiency with its cellular-based business application, says Randy Valentino, CTO.

JAMES SCHNEPF

■ BY JOHN COX

The truck driver makes a right turn while his partner uses his Intermec 760 wireless handheld to punch up data on their next delivery. Besides directions and order details, he finds a text note: "Beware of large dog." Calling the customer from his cell phone, he tells her the truck is just a few minutes away — and asks her to leash the dog.

Small details like these are adding up to a big competitive advantage for The Bekins Company's HomeDirectUSA division and its network of 75 independent delivery agents. With accurate address data and a real-time, two-way cellular data link, Bekins' new Service Tracking Automated and Routing System (STARS) is boosting efficiency by about 20% at Cardinal Transportation, says Gregg Bennett, president of this Richmond, Va., Bekins agent.

"That's a tremendous plus for us. The [traditional voice] communications between drivers, dispatchers and [route] planners is very time-consuming," says Bennett, who participates in a committee overseeing this Bekins project. The wireless data connection automates much of this, simplifying and speeding up these information exchanges.

Bekins expects STARS to smooth "final-mile" delivery processes such as picking up products and checking customer availability, says Randy Valentino, CTO at the Hillside, Ill., company. While at the agent's distribution center, the delivery team can tap into a wireless LAN (WLAN) to access routing and dispatch data on an enterprise server running Microsoft SQL Server. On the road, the delivery team uses a cellular data link to access order and shipping manifest data in an IBM DB2 database at Bekins' mainframe data center. And at delivery, handheld at the ready, drivers can confirm other services such as unpacking, setup and cleanup; note exceptions or returns; and take an electronic signature from the customer as proof of delivery.

STARS reflects the growing sophistication, affordability and simplicity of wireless technology. And it shows the growing willingness to use wireless for line-of-business applications, the lifeblood of business. As Valentino says of STARS, "This project was conceived as wireless from the start."

Mobility-enabling the enterprise

Indeed, network executives increasingly are making mobility a part of their new data center architectures. Like at Bekins, they're delivering applications to mobile workers, either pushing data out to them or collecting new data from them via WLAN or cellular data connections.

"Mobility is about bringing business applications out to the point of activity," says Jeremy Platt, national mobility practice director for Dimension Data, a systems integrator in Reston, Va. The point of activity might be in a truck or a customer's facility, or it might be within the company, such as wireless support for doctors at patient bedsides or for tech support staff servicing desktop PCs and network gear.

Willingness to push mobility and wireless-enable corporations comes with

See Wireless, page S12

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Wireless

continued from page S10

maturation of necessary technologies, Platt says. "You can create a much more stable environment for [wireless] users, and you don't have to worry so much about managing it," he says.

Particularly important has been the launch of middleware products — and approaches — developed especially for mobile and wireless computing. Today, middleware is streamlined into relatively easy-to-deploy, third-party applications or extended to mobile clients from the existing enterprise middleware infrastructure (see www.nwfusion.com, DocFinder: 2943).

Wireless middleware is typically lighter weight than the traditional middleware products used to connect landline clients with the back-end infrastructure. Such lightweight middleware can greatly simplify the task of creating smart client applications that connect to enterprise data and applications.

A traditional middleware layer, including communications servers, proved to be a problem for Bekins and its wireless deployment. "It was taking 15 to 20 minutes to get data from the handhelds to the back-end databases," Valentino says. "We couldn't afford those time delays." So Bekins stripped out that middleware in favor of a newer approach. Now transactions created on the handhelds are funneled to the DB2 database, for example.

Making middleware mobile

Mobile middleware from Aeroprise is proving a healthy solution for the Fred Hutchinson Cancer Research Center in Seattle, which needed to give help desk and tech support staff wireless access to the Remedy trouble-ticket system it has long used for reporting PC problems, network faults and application glitches. While a helpful tool, Remedy had been anchored to IT desktops, which caused problems.

That meant a team of about 20 technicians had to trek back and forth across a seven-building campus to deal with support calls. As a result, doctors and staff complained of long waits. By late 2003, those users were close to revolt, says Bruce Steinberg, Remedy administrator at Fred Hutchinson.

The Aeroprice Mobile Application Gateway has a set of ready-to-use adapters, or programs, that talk to the back-end application, in this case Remedy, via that application's programming interface.

The gateway includes a rules engine and one GUI for network administrators and another for end users. Using these graphical tools, users can design their own task workflow and select for each step a subset of Remedy data that is to be sent via the center-wide 802.11b WLAN to client handhelds.

Fred Hutchinson has equipped the tech staff with Dell Axiom handhelds running Windows Pocket PC 2003. "Our technicians log into a Web page [over the WLAN] and get the information they need in an easy-to-read table format," Steinberg says. "They can drill down for more information, make notes and then update or close the trouble ticket."

Since the tech support group received wireless Remedy access in January, it has met service-level agreements nearly 100% of the time, Steinberg says. This compares with 85% of the time in the past. "You can't find our tech support staff here in the office [now] because they're always out in the field," he adds.

Mobile middleware also is proving essential at Marshfield Clinic, a healthcare group practice of 39 centers serving much of Wisconsin. "We want to take the patient's electronic medical record and bring it into the examining room," says Carl Christensen, CIO for the clinic in Marshfield, Wis.

Marshfield Clinic is pilot-testing a deployment that gives doctors wireless access to object-oriented patient-care and clinical applications via Fujitsu wireless PC tablets running Microsoft XP Tablet Edition. Object broker middleware provides connectivity between the tablet-based applications and an array of back-end servers and databases.

Mobility middleware from NetMotion Wireless lets doctors move freely about clinic facilities without losing their wireless connections. NetMotion Mobility, client/server software, creates a VPN that lets wireless clients roam across wired and wireless nets, and between subnets, while keeping the session intact. "My goal was to let our physicians roam seamlessly anywhere on our campuses," Christensen says. With NetMotion, doctors can access medical data via a clinic or partnering hospital WLAN, from a desktop docking station, or even while at home.

The clinic has created cellular-like WLANs — almost doubling the number of access points you'd find in a typical WLAN — to create a pervasive wireless blanket at each site. Wherever they are or whenever they want, doctors can access forms and records. The design also ensures doctors have a wireless link even if their initial access point fails.

WLANs unleash apps

Just as some WLAN designs become more cellular-like, cellular nets are becoming more LAN-like as their bandwidth increases. Cellular data services such as Enhanced Data Rates for GSM Evolution and Code Division Multiple Access, with respective data rates of up to 130K bit/sec and 300K to 500K bit/sec, make it possible to ship more data, or ship it faster, to support more complex applications, and to execute many transactions nearly in real time.

In the Bekins case, cellular data connection gives drivers instant access from almost anywhere to the mainframe-based order data. And when a driver captures a customer signature, billing is triggered immediately. Until now, this was a manual process that usually waited until the next day, after the driver had returned, filed paperwork and keyed the data into a computer, says Bennett of Cardinal Transportation. "With the new system," he says, "we'll speed up our cycle time by at least 24 hours."

Advances in wireless nets and mobile computing now make it possible to unmoor line-of-business applications that until recently could be used only by workers at desktop PCs. Now those applications with their data and transactions can be shifted into the hands, or even one hand, of workers on the move, via WLANs or the new generation of cellular data nets.

Forward-looking network executives already are exploring potential business benefits such as increased revenue, lower costs and improved customer service. ■

Rethinking apps for wireless use

Don't let bad application design squash attempts to mobilize corporations.

RICCARDO STAMPATORI

When it comes to the success or failure of mobility-enabling an enterprise application, paying attention to application design could make all the difference, says Todd Berner, a managing director at Dimension Data, a systems integrator in Reston, Va. "The GUI [for handheld devices] needs to be more driven by the workflow and activities of the user," he says. "This is not the traditional way of thinking about these applications."

Ease of use was foremost on mind for The Bekins Company when it decided to wireless-enable truck drivers for its HomeDirectUSA division. Knowing the drivers weren't PC-literate, "we went through painstaking effort in our application design, so there's hardly any decision-making for the drivers," says Randy Valentino, CTO at the Hillside, Ill., company.

When a Bekins agent picks up his handheld device to enter or access information, he is guided through each process via a wizard-like design built into simple screens, Valentino says.

Application design also factored heavily into the wireless project at Marshfield Clinic, in Marshfield, Wis. Years ago, the clinic designed physician applications with minimal keystrokes — an ease-of-use factor it needed to take into account for the wireless application, says Carl Christensen, CIO at the clinic.

So when using their wireless PC tablets, Marshfield Clinic doctors typically select from drop-down lists that have been carefully arranged to be simple to find and follow. The tablets also feature enlarged toolbar buttons and support for an "active stylus" that lets the doctors enter handwritten messages, annotations, instructions and signatures.

— John Cox

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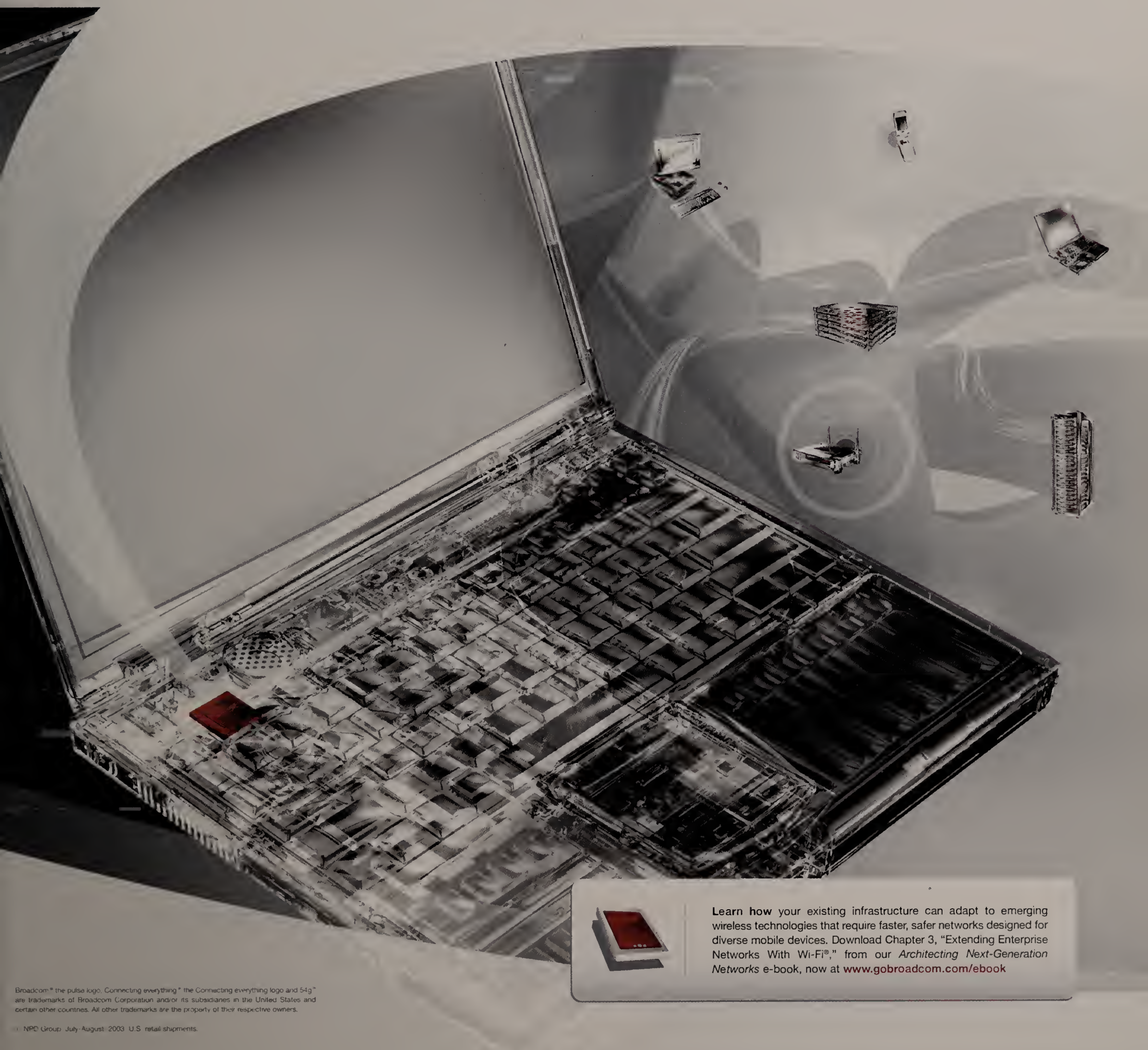

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Using virtualization technology to pry apps away from dedicated physical resources can have an added benefit: DR on the cheap.

Do-it-yourself disaster recovery

BY JULIE BORT

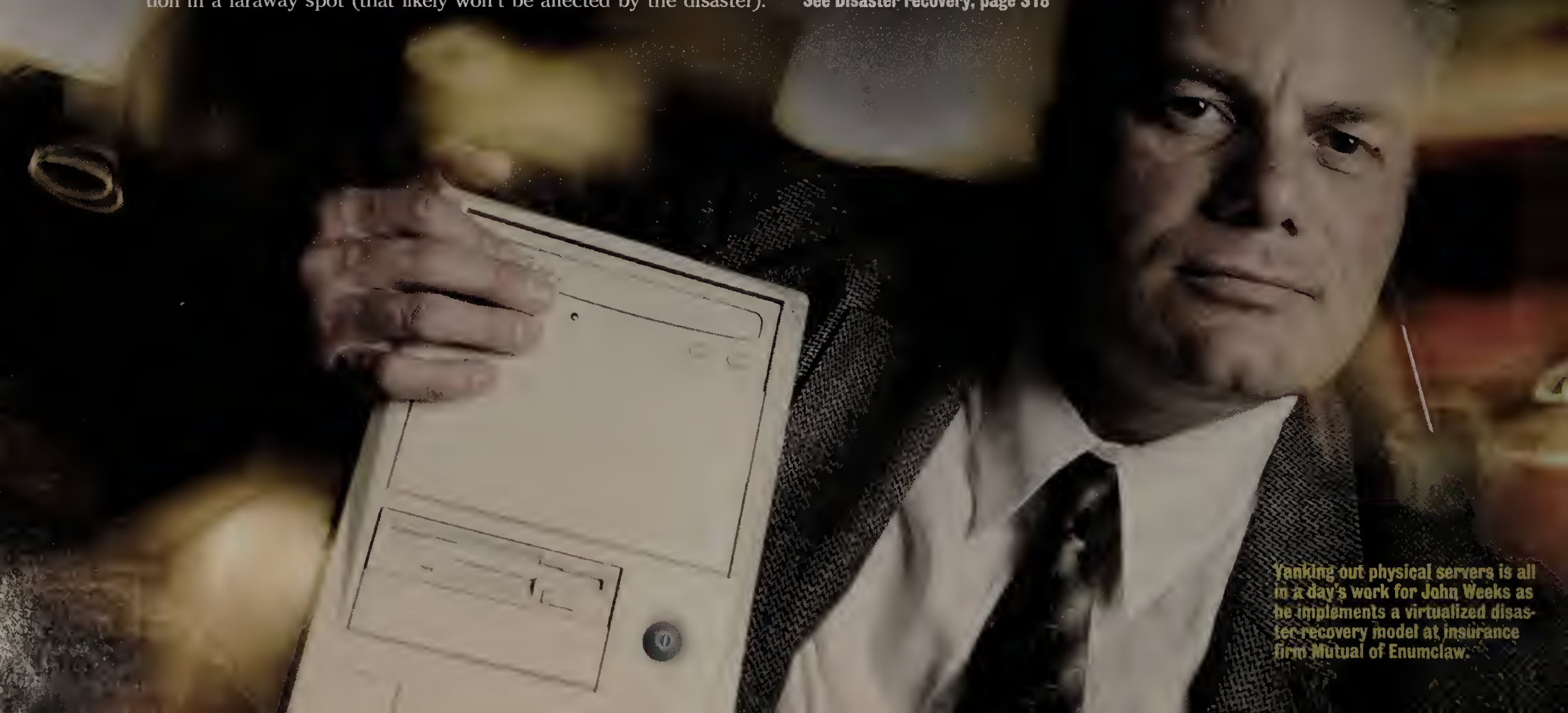
While most network executives are looking at server virtualization to reduce hardware costs, the technology also could offer a budgetary bonus: less-expensive disaster recovery. With disaster-facility contracts easily costing upward of $30,000 per month, killing off that budget line item is tempting.

"One of the hardest parts budget-wise [in IT] is disaster recovery and its incredible price tag. Traditionally, you had to duplicate everything you've got in one data center to another and then pray that you never have to use it," says Jason Brougham, enterprise network manager for American Medical Response, a Greenwood Village, Colo., ambulance service company with 18,000 employees and 255 locations nationwide. "The only way you can afford to build true disaster recovery is to run hot to hot, with both data centers active all the time on servers using virtualization."

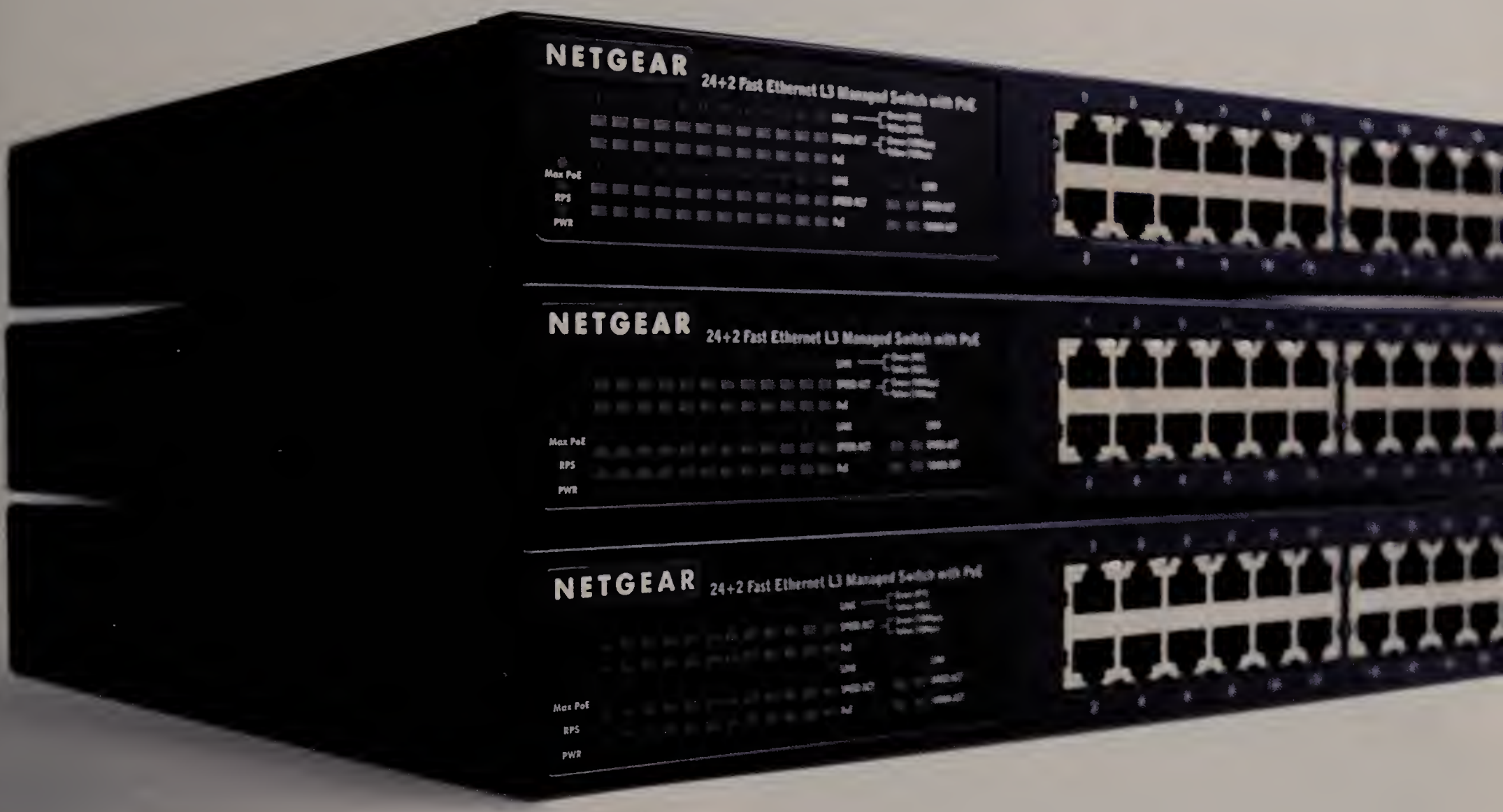
Companies with virtualized servers and storage-area networks (SAN) in disparate data centers already have most of the pieces in place to take on in-house disaster recovery: They have a potential back-up location in a faraway spot (that likely won't be affected by the disaster). They have network connections between the two sites. Their virtualization and load-balancing software would let one server or SAN take over for another almost instantly if a short-term failure occurs (from routine maintenance to a few hours of blackout).

Network executives easily can make the common-sense leap for full-fledged in-house disaster recovery. If servers float away in a storm or are otherwise permanently damaged, one data center can become the backup for another. Even if you don't bring disaster recovery completely in-house, virtualization can help save money on the facility

See Disaster recovery, page S18



Yanking out physical servers is all in a day's work for John Weeks as he implements a virtualized disaster recovery model at insurance firm Mutual of Enumclaw.



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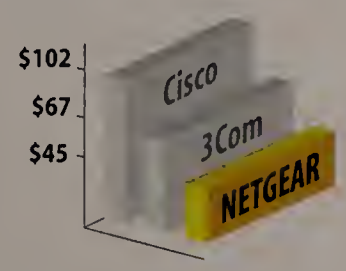

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Disaster recovery

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contract. Fewer virtualized servers do the work of more physical servers.

"The pieces of hardware become less critical in a virtualized environment — if there are 400 servers, with virtualization you could conceivably do disaster recovery on 20 servers. That might be reaching, but that's the idea," says Vivian Knoerle, principal consultant for Intellinet, a virtualization and disaster-recovery systems integrator in Atlanta. "If you do still use a disaster-recovery facility for hosting, the expense and hardware requirement can be less — because the number of physical servers can be far less."

Such is the case for insurance company Mutual of Enumclaw, based in Enumclaw, Wash., with 16 offices in Washington, Idaho, Oregon and Utah.

"We approach disaster recovery like a life insurance policy. We don't want to have too much, but we want enough," says John Weeks, IT director for Mutual of Enumclaw, which uses virtualization software from VMware, an EMC company. "The virtual capability simplifies our recovery efforts."

Critical insurance-related processing runs on the mainframe, so Weeks currently contracts with a disaster-recovery facility for the mainframe. But the company relies on Intel-based IBM xSeries servers for other applications such as Citrix, which it runs via a virtualized server farm. With VMware, Mutual of Enumclaw has reduced the number of physical servers it uses by about 35%. (Weeks also has begun rolling out virtualized IBM blade servers for the server farm. A dual-blade box hosts up to three virtual servers while the quad blade hosts as many as five, he says.)

This translates into a lot less hardware required for disaster recovery. Before implementing VMware, the company contracted with its disaster-recovery facility to maintain a similar PC server environment — one back-up server for every production server. "We have simplified that [disaster] model by going to a virtual model," Weeks says. "VMware is hardware-agnostic, and we can restore systems without identical or near-identical hardware. This creates flexibility and expands our options regardless of what site we recover to, either our own site with older hardware or a new site with all new hardware." Mutual of Enumclaw also reduced its network and support requirements for disaster recovery, Weeks says.

Still, like all things IT, turning virtualized remote data centers into disaster-recovery backups for one another won't be a cakewalk. Technology issues abound, with server configuration management/inventory control, data synchronization and WAN bandwidth among the greatest challenges. And you can't overlook the need to address processes, personnel and practice.

More to lose

Because each virtualized server is the equivalent of many physical servers, if even one of them goes up in flames, so too does much of your IT infrastructure. Rebuilding it quickly means knowing exactly what you've lost.

Tools are available that let you take an image or snapshot of an entire virtual server for firing up on another physical machine (as in VMotion or UltraBac). But missing are tools to keep track of exactly how those virtual servers are configured, what software is loaded on each, what tweaks might be needed to ensure all applications perform nicely together and so on.

"Configuration management and change management of virtualized machines is a whole new ball of wax," Intellinet's Knoerle warns. "You need to keep very good track of what's on each server, and the configuration management tools we have today don't support virtualized machines."

Plus, for any disaster-recovery operation, "you need to keep track of configuration on an operations-group level," she says. Virtualization will ease that process — you likely will have your most-critical applications automatically fail over to other virtual servers. But restoring less-critical applications could

See Disaster recovery, page S20

The do-it-yourself must-ask list

Thanks to virtualization, many companies will be doing their own disaster recovery for the first time. Start with these basic questions:

- How will you inform key people of the disaster and get information to employees in the affected area?
- Who grabs the configuration documentation before getting on the airplane?
- Where do you keep backups of configuration documentation, and how do you access those?
- Which IT members go to the back-up site, and which stay behind to work on the failed systems?
- What is the plan for failing back, once the disaster is over and the data center can be used again?
- Where will employees work while the primary site is unavailable, and how will they access IT systems?
- Have you tested all applications to work with the failover systems? If configuration changes have occurred, have applications been tested again?
- Who is assigned what tasks for getting the failover site fully operational?
- What SAN has the synchronized data and how will failover occur to it?
- How do your database, server cluster or virtualized servers synchronize, and who is responsible for verifying that an accurate synchronization has occurred?
- What is the plan for failing over to the second site if the network connections in the region have been affected by the disaster?
- Where are the long-term restore tapes, and who is responsible for getting them?
- Has all older equipment functioning as disaster backups been kept up to date with patches and testing?

ILLUSTRATION RICCARDO STAMPATORI

The third-party part

So with your virtualized servers, your switched SANs and your other new data center technologies, you don't need to hire a disaster-recovery provider to stand by with space and equipment. Or do you? While you may save big bucks bringing data center business continuity in-house, you still might want to consider off-site specialists for the following needs:

- Stand-by space equipped with PCs and telephones where key workgroups can continue operating, such as call center personnel.
- Design and testing of failover systems.
- Testing and management of your older equipment kept for disaster failovers.
- Dry-run training days and results analysis.
- Help during the hectic hours when transferring from one site to another — and for failing back when the problem site is ready to go live again.

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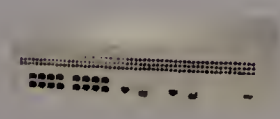

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Disaster recovery

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get ugly. Back-up media labeled by the physical server won't be good enough. You'll need to know exactly what virtual machines and applications were running on each physical server, and which processes should be prioritized.

"Do some kind of classification — as simple as maybe putting applications inside labels such as mission-critical, business-critical, operational. That's how you'll determine your recovery objectives, and that will determine the infrastructure you need and the plan," says Stephanie Balaouras, a senior analyst for The Yankee Group.

American Medical Response's Brougham, who has overseen in-house disaster-recovery efforts for several companies, underscores that an IT inventory assessment of all resources, virtualized and not, is necessary. Most companies do a poor job of inventory management, particularly on servers, he says, because they rarely implement server-level inventory management tools. With a small number of virtualized servers now representing a large number of physical servers, in all likelihood your inventory assessment will uncover that "you've got 40 more apps than you really need. Or you'll find out you need 40 more apps," he says.

On the bright side, if you haven't yet standardized on equipment across your data centers, you're in for some relief. The virtualized servers won't care what hardware they are placed on, and older equipment can be used. This also differs from the days when data centers had to be exactly the same to perform as back-up sites.

SANs and synchronization

You will need to analyze the data on your SAN in a similar fashion. Mutual of Enumclaw plans to expand its SAN but will continue using existing storage for testing and disaster recovery, Weeks says. It will add 3T-byte EMC AX100 Serial Advanced Technology Attachment SAN devices with built-in switches. These switches, also available in stand-alone versions from vendors such as Brocade and McData, let the SAN move data from one device to another for disaster recovery, he explains.

Failover should be the easy part. Knowing where your most critical data is, and how to make sure it is the first to come back online, will be the hard part. This is part and parcel with categorizing your data using information life-cycle management techniques, which analysts recommend implementing as part of your in-house disaster-recovery efforts. "The most important step is data classification," Balaouras says.

You'll want to look at technologies for synchronizing data between main and failover sites, too. Every disaster-recovery plan uses the "recovery time objective" to keep data loss within acceptable boundaries, says Belinda Wilson, worldwide executive director of business continuity services for HP. This will help you pick your synchronization method. But with virtualization technologies, synchronization can occur at many levels — at the application, the database and the SAN, for instance. Mixing and matching among synchronization techniques and ensuring full data synchronization are issues, as is determining which source is the last word should a bad sync occur.

The fun of requirements

Somewhere near the six-month mark, you should have the building blocks for in-house disaster recovery figured out: configuration/change management, inventory assessment, application and data classification, SAN failover and data synchronization. Now the real fun begins — planning technical requirements for your new virtual data center, disaster-recovery infrastructure.

Your analysis should cover what systems employees use most, what systems the business most relies on and your technical needs, Brougham says. "What's the load on the network if I suddenly take this database out-of-building? What's the performance hit on the application if I take it out-of-building? Is it even possible to centralize these systems 250 miles away?"

The answers to these questions will determine your design, from a once-nightly, several-hour-long database-synchronization process to mirrored systems that take snapshots of each other every 15 minutes, for instance.

While you likely already have network connections between your virtualized sites, you'll have to look at them in a new light. Brougham suggests using Multi-protocol Label Switching (MPLS) for disaster recovery because it offers a lot more capacity than frame relay can be had at T-1 prices yet also can be meshed. MPLS automatically shifts IP traffic among a variety of routes, which is just the kind of failover you'll want. With any-to-any site connections, you can maintain higher usage thresholds while still letting your links absorb the shared failover traffic. He compares it to a company using two T-1 lines for its data centers, each operating at a 60% utilization rate. Disaster strikes, one data center must failover to the other, and now all the company's traffic overloads the other link.

But, Brougham warns, "Watch out. You can create your own disaster with a fully meshed network — virus propagation can kill you." So you'll have to think through how to increase security when building a meshed WAN for disaster recovery.

The people factor

Like all IT projects, half the battle is won by technology, the other by process and people. Draw up detailed procedures and practice them — you don't want the live disaster to be the first time that your staff implements the plan. They might need a new mindset when bringing up a back-up data center via server virtualization, too. They might be accustomed to replicate applications, not the fast failover in a tightly coupled, virtualized environment. Unexpected issues might arise, such as deciding when they must reconfigure the DNS server to point to the back-up data center.

"From a pure disaster-recovery aspect, the first things that go wrong are the ones that you don't test enough. If you've got 120 applications that have to go onto a server in the disaster-recovery site, and you get 119 of them tested, it's always the one you missed that blows up," Brougham says. He advises hiring a software-testing consultant to evaluate how applications will play together when ported to the back-up virtualized boxes.

Include dry run practices in your testing schedule — which will, of course, require time.

Despite the hard work involved, in-house disaster recovery makes a lot of budgetary sense when comparing the rarity of disasters with the cost of maintaining idle back-up equipment. And it almost goes without saying that these days you can't simply ignore disaster recovery and hope lightening never strikes. Your virtualized data center could be the godsend you never knew you needed. ■

Helpful tools for the do-it-yourself disaster-recovery enterprise

Brocade SilkWorm SAN routers — manage failover between remotely located and/or differing types of SANs.

HP Virtual Server Environment for HP-UX 11i — aimed at servers and blade servers; is one of the many tools HP offers for virtualizing servers.

HP Workload Manager — available for many operating systems, dynamically allocates CPU, memory and disk resources to meet application service-level objectives.

McData Eclipse or IPS families of multiprotocol SAN switches — manage failover between remotely located and/or differing types of SANs.

Microsoft Virtual Server 2005 (evaluation release available now, full release expected late 2004) — supports virtualization of Windows 2000 servers.

Solaris 10 — provides a variety of virtualization services for Sun boxes running Solaris applications, such as clustering (doesn't support other operating systems).

Solaris 10 N1 Grid Containers — partitions Sun boxes so that they can run multiple instances of Solaris, even older and new versions simultaneously.

Sun StorEdge Traffic Manager software — provides automatic failover, load balancing and the like even between Sun servers in remote locations; can prioritize traffic from applications that cannot sustain delays.

Topspin Communications Topspin 360 server switch — creates virtualized clusters between servers of any operating system (even those running VMware) and/or between SANs for automatic failover, load balancing and the like. Useful for sites wanting to virtualize non-Windows servers.

Topspin VFrame — software for programming the 360 server switch with user-defined policies for load balancing, failover and the like. Supports VMware, Oracle Grid Computing and others.

VMware ESX Server or GSX Server — popular software for virtualizing Intel-based servers.

VMware P2V Assistant — eases conversion of physical servers onto virtual servers; can be helpful if moving from failed physical servers to back-up virtual servers.

VMware VMotion — takes an image of a VMware ESX or GSX virtual server for porting to another server running VMware virtualization software; intended for scheduled maintenance, not automatic failover from disasters.

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Sam Marrazzo, senior application architect for Praxair, shares his insights on preparing applications for virtualized servers.

■ BY BETH SCHULTZ

As senior application architect for Praxair, a $5.6 billion industrial products supplier in Danbury, Conn., Sam Marrazzo has spent the past year evaluating applications — old and new — for use on virtualized servers. The differences between developing applications using virtual instances rather than physical servers can be astounding, Marrazzo says. For example, he has found that application build times can be up to 100 times faster with virtualization. "Crazy, but true," he says. Here Marrazzo tells Signature Series Editor Beth Schultz what he's learned as an application architect working within a virtualized environment, from how to test an application to how to plan for disaster recovery.

STEVEN VOTE

Under what circumstances should an application not be put on a virtualized server?

One of the first baselines we establish is how CPU-intensive an application is. If an application has a sustained CPU requirement for a long period of time, then it's a physical server candidate. So if we see 80% CPU utilization for an hour, that would tell us that VMware [server virtualization software from EMC business unit VMware] as a whole wouldn't be good for that application, that the application is going to require a dedicated CPU. [While Marrazzo evaluates applications for use on virtualized servers, the decision to move to a virtualized environment was made by Praxair's infrastructure group.]

When we think about virtualization, we talk about 'blip' applications — applications that see the CPU go up to 100%, then come down to 20% to 60% at full utilization. Those are good for a centralized computing environment where we can manage virtual instances.

Are you setting a baseline for every application, or only select ones?

Any application that comes in [for processing] today is tested. We monitor the CPU and then determine if we need to move it off or not. Excellent candidates are applications for print servers and terminal servers. Also new applications, like our job scheduler, are being brought into VMware.

How does that job-scheduling application run in a virtualized environment and how has it benefited Praxair?

We have been using the job scheduler [from Tidal Software] to run the whole ERP application [from J.D. Edwards]. We selected Tidal because we saw it could run in VMware, and that meant we didn't have to buy new hardware, and because it fits into our disaster-recovery process very nicely — you definitely need a disaster-recovery solution for enterprise scheduling. We physically split Tidal on two separate VMware instances, [each of those running on servers at disparate data centers]. That gives us disaster recovery and isolation.

In the past, we were decentralized from a scheduling perspective. We'd run a job on this system and one on that system, and we couldn't have interdependencies within those jobs. All the jobs were scheduled in their environment without visibility to the outside systems. With Tidal, we get streamlined job scheduling, manageability and a centralized, enterprise view of all the production applications.

You mentioned disaster recovery for applications. How does virtualization fit in?

We have two separate data centers in the Northeast. We split the resources between them — the servers and the instances. That's how we isolate the applications. If an application needs disaster recovery, we load balance via two servers and separate it that way. This has saved us in physical capital costs. In a traditional sense of distributed computing, you have to buy two of everything. Now we just buy two VMware servers and virtualize the instances for the disaster-recovery plans.

Do you work with other virtualized IT resources?

We have shared storage that's virtualized, so we have redundancy there. We attached the storage to VMware, but use a separate [storage-area network]. We have direct connections to the storage, so all applications have access to that storage.

What other changes have come from the ability to run enterprise applications in a virtual environment?

Now there's no need to buy a server for every project. We can manage these virtual instances via a console. And on the fly, if there's a problem with the VMware session, we can allocate CPU or memory. Applying patches also is centralized now. At the same time, virtualization reduces our costs of physical devices. In most cases within an enterprise, 60% to 70% of application servers are underutilized.

As far as staffing, requirements are basically the same. But in the past, we were building servers, and we couldn't keep up with the demand. Now we're building images, only using the amount of CPU or RAM required for that particular project. It's not like we're running around with hammers and screwdrivers and wrenches, but we're still building big enterprise boxes for the VMware instances. It's just that it's one now vs. 30. And before, when we needed to do an evaluation of an application, we needed to have a server built. The first question was 'Who's going to pay for it?' Today, we can evaluate applications very quickly, creating instances on our own, on the fly. That means we can deliver those applications much faster, and make the business units much happier. We're looking at 80 to 100 times faster for application delivery without the server build time and ordering. I know it sounds crazy, but it's true.

Today, we can evaluate applications very quickly, creating instances on our own, on the fly. That means we can deliver those applications much faster, and make the business units much happier.

How do you anticipate virtualization unfolding further at Praxair and beyond?

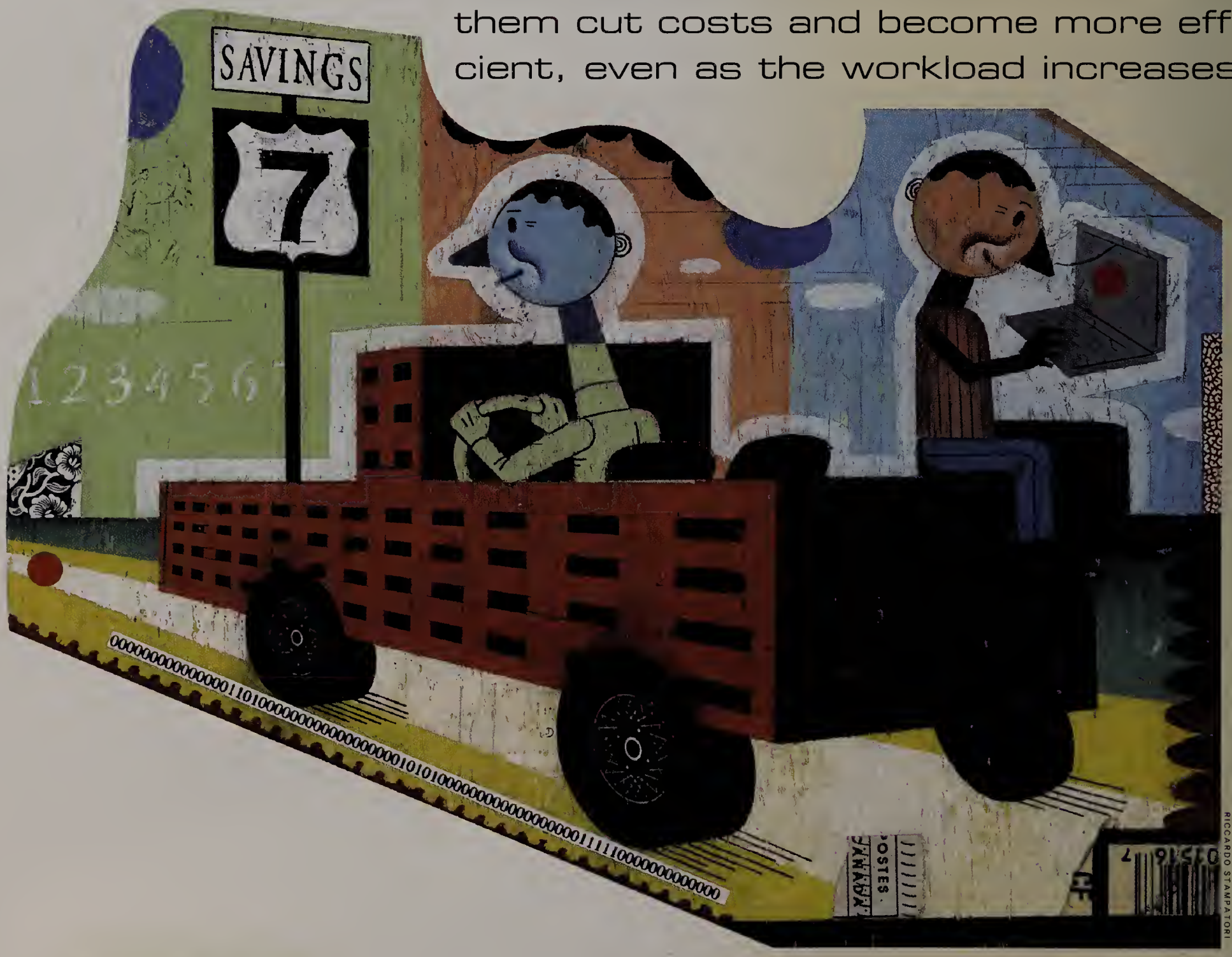
At Praxair, we'll be continuing down the consolidation path — you can't consolidate everything in the first year. So we look at new apps and then legacy apps. Our goal is to further reduce the number of application servers in the data center.

In the industry, what I'd like to see is developers coming up with guidelines for running applications on VMware. We'd like to see the larger companies like IBM and Citrix get VMware certifications. What we hear from vendors universally is 'We use VMware in our testing and development environment.' We don't hear them saying — and we want to — that they use it in their production environments across the board. We want to see more vendors adopt this technology because it will continue being our direction going forward.

We're an early adopter, but so far, so good. Deployment and execution have been great. ■

7 ways to slash costs with the new data center

As data centers evolve, businesses say these technologies have helped them cut costs and become more efficient, even as the workload increases.



■ BY JOANNE CUMMINGS

The new data center, marked by cutting-edge technologies such as virtualization, Web-centric computing and autonomic computing, promises new efficiencies in hardware, software and staffing. But as more organizations move to the new paradigm, cost savings is rising as the prime benefit. Users and analysts say a business can cut overall operational costs anywhere from 25% to 90% with smart implementation of these seven new data center technologies.

See Costs, page S26

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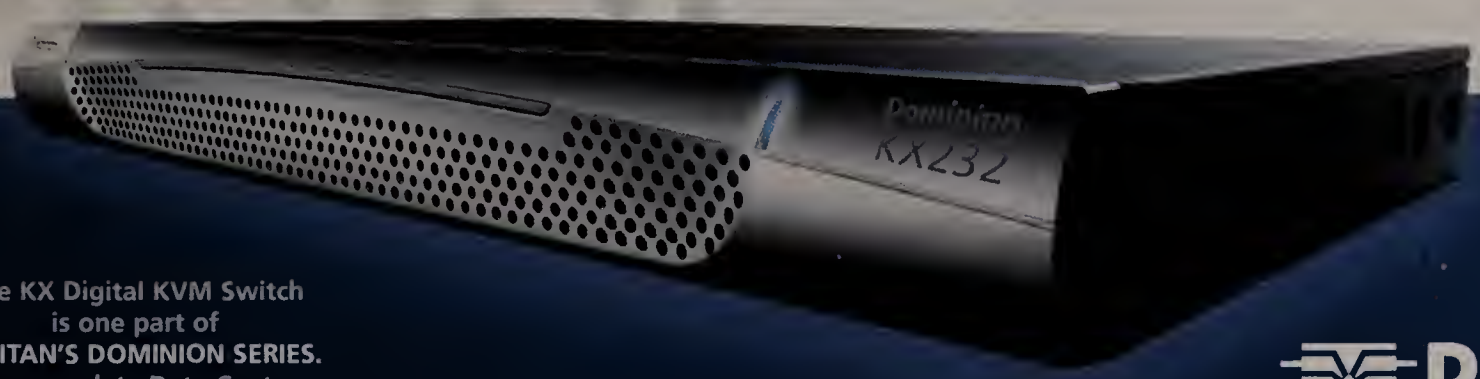

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Costs

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1. Storage consolidation.

A good first step when it comes to slashing data center costs is pooling storage using storage-area networks (SAN) or network-attached storage (NAS), experts say.

First, a company must get a handle on the types of storage it has in place — whether direct-attached, SAN or NAS — and calculate the maintenance and operational costs of each. Then, migrate to the most efficient, which in most cases will mean some kind of networked storage, says Johna Till Johnson, president at Nemertes Research and a *Network World* columnist. Many organizations are still hobbled by inefficient storage architectures, she says.

Such had been the case at American Medical Response (AMR), a medical transportation company in Greenwood Village, Colo. "We had a lot of the servers here in our data center that hadn't been moved onto the SAN and had their own disk array hanging off them. They were all running at about 40% utilization," says Jason Brougham, enterprise network manager at AMR. "That means we were wasting terabytes worth of storage and tens of thousands of dollars. When we combined all of that on the SAN we got to pool all of those chunks of storage. It's a real cost savings."

The deciding factor on storage architecture should be the cost to manage and maintain it. "NAS can be trickier to manage in some cases," Johnson says. "Plus, NAS is generally optimized for file storage, so it's great for archiving. But it doesn't work so well for database access. You have to look at what's best for your organization."

But whatever storage architecture you decide on, the most cost savings come only when it's implemented beyond the individual department. Johnson recommends appointing a "storage czar" to oversee the corporation. "You need one guy in charge, or at least you want to get everybody together on the same page and have conversations about this. That's where you really see your costs come down," she says.

2. Server virtualization.

Most organizations support and maintain a slew of underutilized application servers. The smart moves are server consolidation and deployment of more-efficient technologies such as blade servers or virtualization software.

AMR has seen significant cost savings, especially in terms of hardware and maintenance, by implementing blade servers and virtualization from EMC business unit VMware, Brougham says. "With blades and server virtualization, you quickly find that one server rack can almost run your entire company," he says. "It's hard to put a dollar amount on it since every company is different. But I'd say that from rack space alone there's a huge savings. You don't have to cool as much space, and you don't need UPS for as much."

But as with storage, there are caveats. "With virtualization and consolidation, we've got database servers with nine different instances on them. If the SQL server engine stops, all nine databases stop. So change management, patch management, regression testing — all of that stuff becomes more critical," Brougham says.

3. Data center consolidation.

Once organizations have consolidated storage, servers and applications, they soon find they require less space in their data centers and fewer data centers. That leads to some smart cost-conscious decisions about the data center placement and equipment.

With broadband becoming less expensive and more readily available, organizations can cut costs simply by locating their data centers in rural areas with less-expensive real estate, Johnson says. "Broadband's getting cheaper and real estate is always getting more expensive, so optimizing the thing that costs a lot but is going to rise, at the expense of the thing that's decreasing in cost, is a good strategy."

Others say the key to a cost-effective data center is to take advantage of the recent economic downturn. Steve MacDonald, CIO at Optimus Solutions, a value-added reseller in Norcross, Ga., did just that as he implemented a new 7,000-square-foot data center. The company scoured surplus equipment brokers and hit a sweet deal. "A very large network carrier had equipment on hand from a data center that never got built as the economy soured," MacDonald says. "We found the company that was helping unload those assets, and literally paid nothing per square foot of data center. We probably saved ourselves easily $50,000 or $60,000 in materials alone. That was enormous cost savings."

4. Thin-client computing.

Moving to thin-client computing via technologies such as Citrix or Web services also cuts data center costs, especially in terms of support, Brougham says. AMR has more than 250 offices nationwide, some of which are very small. "When you have an office of eight in Mobile, Ala., and your closest support is in Atlanta, it takes days for somebody to get out there and fix a desktop issue with an application or apply the latest patch," he says. "But with thin client, you just support a Web browser or a Citrix client application and that's it. We can centrally manage the applications, and that's a huge savings."

Most organizations can save 80% of their costs simply by moving to Web services, Johnson says.

5. Open source.

As organizations begin consolidating applications in the new data center, a good cost-saving strategy is migrating to Linux on an application-by-application basis. The more applications an organization supports, the higher its costs, Johnson says. "Organizations should be looking to get rid of the expensive, cumbersome, complex apps, and replacing them with fewer, easier-to-maintain apps." If they also look to run the newer applications on Linux, that strategy easily can reap cost savings of about 80% to 90%, she says.

Brougham offers one disclaimer: "Linux works fine, and you don't have to spend the money on an [operating system] license. But you still need something that's supportable, with a maintenance contract and regular patch revisions and security revisions. I don't think it's ready to handle everything yet." AMR, he says, uses Linux on about 10 of its 350 servers.

6. IP telephony.

At Optimus, MacDonald has reaped a good deal of savings by implementing VoIP on its campus-wide network. "Using VoIP between PBXs, we're able to leverage three times as many ports per line of PBX," he says. "And it actually reduces the number of skill sets we need. We trained our data specialists on what little bit of PBX they needed to know and did away with the requirement to have a support staff dedicated to a proprietary PBX. We get more out of our staff as a result."

Pooling resources is the key with VoIP, Brougham says. "Our No. 1 cost-cutter is IP telephony," he says. "Once you build this next-generation data center and all of this wonderful infrastructure, you can take all of those PBXs you had in your remote locations, consolidate them into a large IP telephony implementation and pool long-distance, local services, voice mail services — and the support of those. That's when you really start saving the money."

7. Autonomic computing.

Another key to cost savings is data center automation, including items such as application provisioning, patch management and security alerting. Concentrating on those areas can help you support new applications and initiatives while keeping staffing levels the same, MacDonald says.

"We look at cost reduction from a manpower standpoint," he says. "We're focusing on getting a greater degree of sophistication in systems monitoring and systems notifications via the NetIQ application manager platform"

Also under evaluation are patch management tools from St. Bernard Software and Microsoft's upcoming Windows Update Server, he says. "The whole idea is to reduce the amount of activity of the IT staff, taking something that probably took three to eight hours in the past and reducing it down to about an hour of quick testing and evaluation prior to rolling out a new patch."

Implementing any of these technologies will slash data center costs. "A good rule of thumb is that people should do something in IT if the cost savings is 25% or more compared to what they're currently doing," Johnson says. "And all of these things will give you at least a 25% cost savings."

Cummings is a freelancer writer in North Andover, Mass. She can be reached at jocummings@comcast.net.

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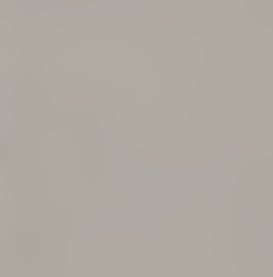

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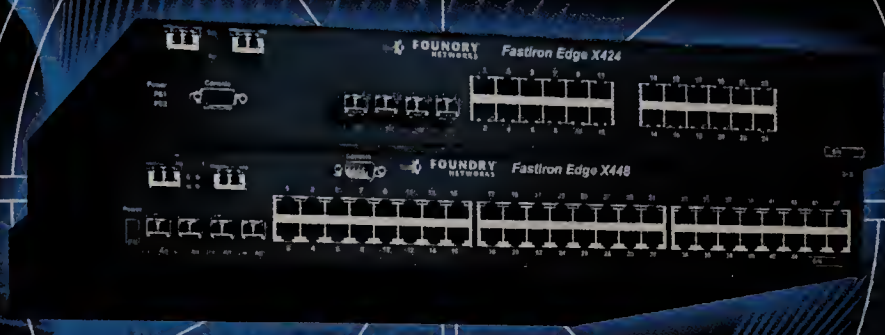

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Technology Update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

ZigBee enables wireless embedded nets

■ BY ZACHARY SMITH

Wireless embedded networks hold great promise for deployment in residential and commercial building-automation, industrial plant monitoring, and other wireless sensing and control applications. An association of corporations called the ZigBee Alliance is developing a standard for low-cost, low-power wireless embedded networking.

Version 1 of the ZigBee specification is set for release in the fourth quarter, and a number of platforms based on the standard are expected to be available around the same time. The specification provides network and application support services operating on top of the IEEE 802.15.4 standard of the media-access control layer and physical layer. ZigBee software may be implemented in microcontrollers for 802.15.4 radio chips.

The software employs a suite of technologies to enable scalable, self-organizing, self-healing networks that can manage a variety of traffic patterns. The standard is well-suited to applications such as lighting, heating and cooling controls; industrial building and automation; and medical device monitoring. The ZigBee Alliance's long-term goal is to enable a scalable, low-cost, embedded infrastructure based on interoperable platforms and profiles that will let devices communicate in ways that have been impractical until now.

The ZigBee standard defines three types of devices: ZigBee coordinator devices, ZigBee router devices and ZigBee end devices. Every network must contain only one ZigBee coordinator.

The primary responsibility of the coordinator is to set up the parameters for building a network and to start that process, including choosing a radio-frequency channel, a unique network identifier and a set of operational parameters.

ZigBee routers can be used to extend the range of a network by acting as relays between devices that are too far apart to communicate directly.

ZigBee end devices do not participate in routing.

All these devices can take on other roles an application requires.

As routers and end devices are integrated into a network, they obtain information about the network from the coordinator or from any router that already has joined. This information lets other devices set their operational parameters to reflect those of the network, and so join it.

A ZigBee router is given a block of network addresses to subdivide and distribute, and when a wireless device or other end device joins the network, it is given one of these addresses.

A ZigBee router uses tree routing, which takes advantage of the tree-structured addressing in making routing decisions. With tree routing, a device does not have to maintain memory-intensive routing tables or perform any additional over-the-air operations to discover routes, hence minimizing network traffic.

But tree routing follows the structure of a tree rather than taking the shortest path, and routes that are longer than necessary generate extra traffic and are more likely to fail.

To improve routing efficiency, the ZigBee algorithm also lets routers discover shortcuts. Each router that wishes to exploit shortcuts must maintain a table containing pairs of the form D,N, in which D is a destination address and N is the address of the next device on the path to that destination. The rule for routing is simple, "if you have a shortcut use it, otherwise use the tree."

The simple request/response protocol whereby shortcuts are discovered under ZigBee is derived from a routing algorithm called the Ad hoc On Demand Distance Vector.

ZigBee networks are simple to install because they form autonomously. Furthermore, the combination of tree routing and table-driven routing provides an operational flexibility and a range of price/performance options to developers that support the ZigBee Alliance's goals of low-cost scalable network infrastructure.

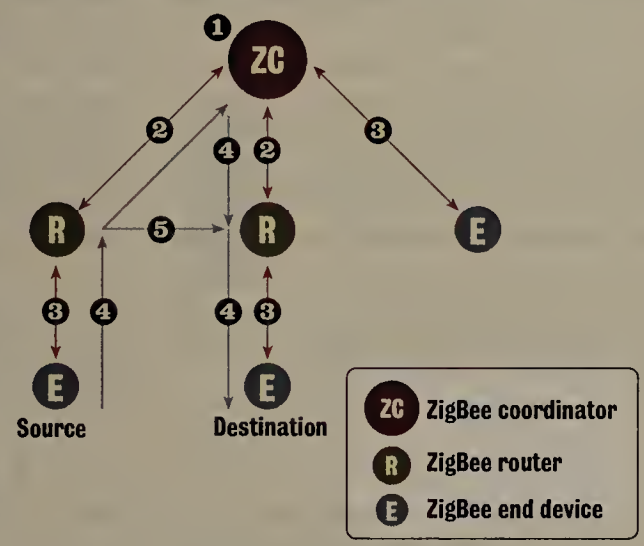
Smith is chief software architect at Ember. He can be reached at zachary@ember.com.

ZigBee

■ HOW IT WORKS

ZigBee facilitates wireless embedded networks. Devices organize themselves into a hierarchical network around a ZigBee coordinator. Routing may follow the hierarchy or choose optimized paths.

1. The ZigBee coordinator establishes the network and sets the operational parameters for it.
2. ZigBee routers join the network by associating with the ZigBee coordinator or with other ZigBee routers that have already joined.
3. End devices may connect with any ZigBee router or the ZigBee coordinator.
4. Message traffic, by default, follows a tree-routing path.
5. Routers, if they have the capacity, also may discover optimized routes to a given destination and store them for later use in routing tables.



Got great ideas

■ *Network World* is looking for great ideas for future Tech Updates. If you want to contribute a primer on a specific technology, standard or protocol, contact Amy Schurr, senior managing editor, features (aschurr@nww.com).

Ask Dr. Internet

By Steve Blass

Can we disable delivery of Windows XP Service Pack 2 through Automatic Updates and Windows Update without blocking the delivery of other critical security updates?

Microsoft disabled XP SP2 updates for 120 days starting Aug. 16 because many companies wanted to test the service pack before it got automatically installed. Update control tools are available at www.nwfusion.com, DocFinder: 3432. Each tool uses a different method to create a new registry key — "HKLM\Software\Policies\Microsoft Windows\WindowsUpdate" with the value "DoNotAllowXPSP2." There is a template for companies that have implemented Active Directory-based Group Policy that centrally disables and enables delivery of SP2. This tool kit includes software that can run on individual PCs for companies that don't use Active Directory Group Policy. A sample script that accepts a machine name as a parameter is provided to support execution through logon scripts or remote script execution commands. A sample e-mail containing an update control URL is provided so users can disable and re-enable SP2 updates through a Web browser (DocFinder: 3433).

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs

Product management nays, USB server yays!

In the litany of connectivity technologies that have transformed the way we work, one of the most profound has been USB. While the standard isn't perfect it manages to simplify some aspects of connecting peripherals such that you might wonder how you ever did without it.

Of course, there's no technology perfect enough to prevent its implementation under Windows from being really crummy.

We just went through a ridiculous number of hoops to get our Sharp Zaurus 5500 PDA updated, and the cause of much of our frustration was the interminable reboots that Windows requires. It seemed like every time we did what should have been a minor change we sat there watching yet another reboot.

To be fair, Sharp hasn't done a sterling job on the process for updating the Zaurus — the company has made it complicated. Product management is turning into a forgotten and dying art.

Product management is about bridging the gap between the sometimes conflicting needs of engineering and marketing with the goal of providing sales departments with the products they can sell. This requires product managers to look at products critically to see whether they fit in with the expectations of purchasers and end users.

Product managers have to cast a jaundiced eye on the cool stuff that the code cutters and hardware jockeys create to ensure that a product is what was planned.

We get to talk to product managers a lot, and over the years there seems to have been a slow and inexorable slide away from product expertise. It now has reached the point where a technical conversation with the average product manager either leaves you with a headache or the disturbing sensation that you've just lost a few points from your IQ.

Anyway, the reason that we decided to grapple with our Zaurus was that not only did it need updating but also we wanted to test a cool USB product. The Zaurus, having a USB interface for syncing with Outlook and exchanging files with a PC or Mac, was a fine test bed.

So once we had beaten the Zaurus into shape, we could turn our attention to this week's topic: The Keyspan USB Server.

This product is unique as far as we can determine. It provides four full-speed (12M bit/sec), powered (500mA) USB 1.1 ports that are accessible across an Ethernet network.

Using a standard USB hub you can place your hub, at most, 15 feet from your PC. Using the Keyspan USB Server you can connect to USB devices anywhere on your network. The only limitation is in the types of devices the server supports.

The current release lets you connect to USB printers, USB multi-function printers, USB scanners and USB human interface devices (including mice and keyboards). Unsupported devices include USB hubs, as well as USB audio and video products.

Getting the server running is an easy, no-reboot process that installs a new USB Hub driver on your PC along with a utility that finds and manages connections to the USB Server (PC and Mac both are supported). The utility is called Keyspan USB Server. (Why call the client-side software the same name as the hardware? Sigh.)

The Keyspan USB Server (software) is first used to configure the hardware server's name, IP address scheme (Dynamic Host Configuration Protocol, static or Rendezvous, otherwise known as zero-configuration networking, a standard we'll discuss next week), administrator password, server mode (single- or multiple-user) and port to be used.

By default, the Keyspan USB Server uses User Datagram Protocol and TCP on Port 3842 so you will need to configure any firewalls between the server and your PC. From your PC you can connect to as many as eight USB Servers on a single port; to connect to the next eight the servers will have to use a different port.

To access a device attached to a USB Server you run the client-side USB Server software and can browse a list of the connected devices on each server on your network. Any devices not in use by other people can be connected to, at which point your PC will take over and "recognize" the attachment of a new USB device.

After that, the entire system is completely transparent. We synced our Zaurus, ran the Zaurus' IP over USB software and connected to a variety of other USB devices, all without any problems. The Keyspan USB Server costs $130 but we've seen it priced closer to $100.

An outstanding device. Highly recommended.

Connect remotely to gearhead@gibbs.com.

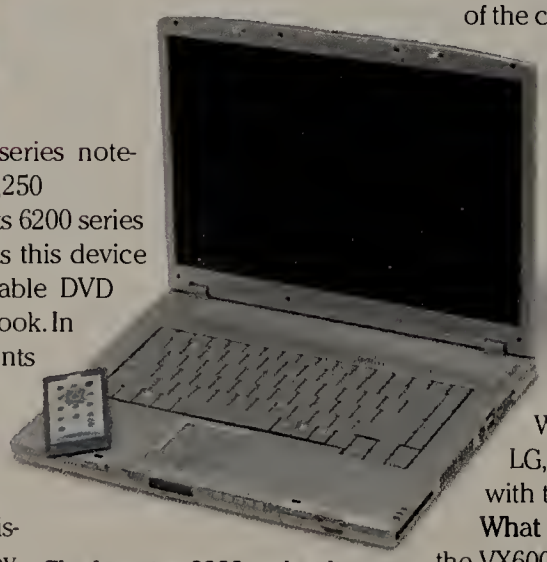
CoolTools

Quick takes on high-tech toys

By Keith Shaw

The scoop: Averatec 6200 series notebook, from Averatec, about $1,250

What it does: Averatec bills its 6200 series notebook as mobile theater, as this device looks more like a large portable DVD player than a computer notebook. In fact, that's one of its selling points — the ability to play DVD movies or audio CDs without users having to boot up their operating systems. In this mode, watching a movie or listening to music is controlled by an infrared remote control, which conveniently fits inside the PC card slot. The notebook's 15.4-inch TFT widescreen display helps in watching widescreen DVD movies, and Averatec says you can watch three 90-minute movies with the device when on battery power.



The Averatec 6200 makes it easy to watch a movie or listen to a CD.

Because this is a notebook, you can boot up the system and get some work done when you get sick of watching movies. The notebook runs on an Advanced Micro Device Athlon XP-M 2400+ processor, has 512M bytes of RAM, a 60G-byte hard drive, and 802.11g wireless LAN connectivity.

Why it's cool: Booting up the operating system to watch a movie on a plane or listen to a CD always has seemed to take too much energy, and also seems to waste power, so we like how these functions can be handled without having to load up Windows (take that, Microsoft!). The 6200 series notebook has a great display (very bright when on AC power), the keyboard has a great tactile feel, and the remote is very easy to use. It was odd to find the Ethernet port, modem port and USB ports (two on each side) on the side of the computer, as the notebook's battery took up the back end. At 6.2 pounds, it's a little heavier than a typical traveling notebook. But we can see using it as a portable DVD player more often than using our other computers that have DVD drives.

Grade: ★★★★ (out of five)

The scoop: LG VX7000 (Verizon Wireless exclusive), from LG, about $180 (after rebates, with two-year agreement)

What it does: The successor to the VX6000 model, the VX7000 is the phone to have if you don't have a smart phone/PDA but still want more features than just a phone that makes calls. Key to the extra features is a video/camera phone with an integrated flash. The camera feature lets you take still images, or videos up to 15 seconds. You can send those messages over Verizon's CDMA 1x wireless network to other phones or e-mail addresses. The clamshell-style phone has two color displays, one external (96 by 96 pixels, 4,096 colors supported), which shows signal strength, battery life, time and date; and an internal display (176 by 220 pixels, 262,000 colors and 11 lines of text supported). When a call comes in, the external display can show caller ID data, including the photo of the person calling (if you have taken their photo beforehand). A five-way navigation button and backlit keypad add to the coolness of the phone.

Why it's cool: I've had my current cell phone for about 18 months, despite having lost it twice (once at Universal Studios in Orlando, once in my car). I have been very happy with that phone, until I tried the VX7000. In the past two years, the technology has leapt forward immensely, and you would have thought my old cell phone was a 6-pound brick with a rotary dial. More impressive to me than the camera features was how much the interface has improved. Accessing all the features, such as text and photo messaging, downloading ring tones, games and adding contacts, is about 10 times easier than it is with my current phone. Downloading things over Verizon's CDMA 1x wireless network seems faster as well, and several applications include much better animation than my current phone. The best part is that battery life is much longer than my current phone's battery life. (Verizon claims up to 198 minutes of talk time, and up to 180 hours of standby time.) We normally don't go for more than a day or two with our current phone before hooking it up to the charger — with the VX7000 we didn't worry for at least four or more days.

So if I lose my current phone again, chances are I'll be picking up a VX7000 to replace it. Heck, I might even purposely lose it.

Grade: ★★★★½

Shaw can be reached at kshaw@nww.com

The LG VX7000 has a user-friendly interface and long battery life.

Face-off

Should companies outsource their e-mail security?

Industry insiders debate whether it's best to handle e-mail security in-house or use a service provider.

Yes, Dan Nadir, FrontBridge

Companies need a reliable way to secure their messaging infrastructure from the negative financial and productivity effects of spam, viruses and network outages. Today, they have two primary options: Install, maintain and manage an internal solution, or outsource the management of their e-mail infrastructure to a managed service provider.

Premises-based, or in-house, message management requires that internal IT departments spend time and money to combat spam and viruses. Building and then scaling the solution is limited by budget constraints, and capacity planning is extremely difficult because of the unpredictable volume and impact of spam and virus threats. Furthermore, with an in-house e-mail security system, IT professionals bear sole responsibility for maintaining infrastructure, installing and updating spam filters and virus definitions, and enforcing policy.

By comparison, outsourced, or perimeter-based, message management services are designed to ensure the integrity and security of e-mail before it enters corporate network infrastructures, without scalability worries. The service delivery model requires no capital outlay, and covers all maintenance and upgrade responsibilities and costs. Outsourcing provides companies with protection that is up to date and available 24-7, even as new spam and virus techniques are introduced. And in the event of a major outage, managed service providers can securely queue e-mail in multiple locations and resume delivery as soon as the local network and servers are operational.

Outsourcing e-mail security for external Internet e-mail is no more risky than "outsourcing" overnight packages to a delivery service such as FedEx or UPS. Yet, no company seriously contemplates bringing package delivery "in-house" and taking on a fleet of jets and delivery personnel.

Some managed e-mail security providers layer on more security via encryption (using protocols such as Transport Layer Security) than the e-mail would have if it were delivered without a security provider.

For network managers, the decision to outsource any function is based on the interplay of three primary criteria: control, performance and cost containment. Managed e-mail services provide IT managers with the control they require, and remove the administrative overhead of managing and scaling the system. Performance is guaranteed by service-level agreements that deliver more than 99.999% reliability. And finally, with managed services, costs remain fixed over time.

Spam is more than a time-consuming annoyance, and its presence threatens productivity and jeopardizes business goals. Managed e-mail service providers are the answer to e-mail security because they block viruses and spam before they enter a company's network with little to no administrative effort required by an already overtaxed IT department.

Nadir is vice president of product management for FrontBridge Technologies, an enterprise message management services provider in Marina del Rey, Calif. He can be reached at dan@frontbridge.com.

No, Paul Judge, CipherTrust

E-mail security consists of five critical components: spam and fraud prevention; virus and worm protection; policy and content compliance; e-mail privacy; and intrusion prevention. Managed service providers address only two of these components: spam and viruses. Deciding to use a managed service rather than handling e-mail security in-house means leaving your organization vulnerable to threats that include policy violations, fraud, eavesdropping and intrusions.

Anti-spam technology has come a long way. Two years ago, products competed strictly on effectiveness. Six months later, false-positives raised concerns, and products began to compete on accuracy. A year ago, the administration of anti-spam point products became a hot topic. Today, companies demand anti-spam products yielding high effectiveness, maximum accuracy and low administration, which both the top managed services and in-house offerings can deliver.

Much like anti-virus, anti-spam is becoming a commodity. Everyone needs it; both managed services and in-house solutions offer it. But the responsibility of an e-mail security provider does not end with anti-spam and anti-virus. In fact, it's just the beginning.

While managed services claim to have policy enforcement capabilities, companies require much more robust capabilities than providers offer. E-mail security products must be able to prevent content and policy violations for inbound and outbound traffic, and provide comprehensive content filtering, monitoring and reporting capabilities. Only in-house offerings provide this level of policy and content compliance. If your e-mail security provider isn't equipped to recognize and prevent policy and content violations, you don't really have e-mail security.

E-mail privacy is becoming a critical requirement for organizations concerned with intellectual property theft, eavesdropping and regulatory compliance. And as e-mail has been progressively more subject to snooping and other fraudulent activities, organizations are prone to new threats, and can run afoul of government and industry regulations. Protecting e-mail in transit is no longer just an option for organizations; it is a necessity. Again, in-house e-mail security products, not managed services, bring this expertise to the table. If your e-mail security provider cannot provide encryption capabilities, you don't really have e-mail security.

Lastly, managed services cannot provide intrusion prevention for e-mail systems. Properly architected in-house offerings act as a single, protected gateway to defend against threats and intrusions targeted at the e-mail system, utilizing an e-mail firewall and intrusion-prevention capabilities to protect against attacks. If your e-mail security provider cannot protect your company from attacks, including denial-of-service and buffer overflows, you don't have e-mail security.

While some organizations may outsource anti-spam and anti-virus protection, no organization can outsource its e-mail security.

Judge is CTO for CipherTrust, a global e-mail security company in Atlanta. He can be reached at pqjudge@ciphertrust.com.

More online!

Log on to Network World Fusion to voice your opinion. Face-off authors Dan Nadir and Paul Judge will add their thoughts to the discussion.

DocFinder: 3424

opinions!

ON TECHNOLOGY

John Dix

RFI for IP PBX vendor showdown

The Voice on the Net show is always a good place to call IP PBX players on the carpet to challenge their marketing claims and get them to try to spell out how they are different.

We've hosted four Network World Showdowns at VON over the years, examining everything from basic IP PBX architectures to the question of whether IP Centrex is a meaningful alternative to rolling your own.

At VON this fall in Boston we are going to change the approach a bit to stir things up. Instead of our usual presidential-style debate, we are inviting six vendors to come prepared to discuss a request for information (RFI) and why their offering is better than those proposed by their brethren.

The vendors invited: Avaya, Cisco, Lucent, Mitel, Nortel and 3Com (please confirm by Sept. 27). While most of these companies are prominent in the VoIP world, why Lucent? The company recently re-entered the enterprise VoIP market by combining some of its own technology with that of OEMs, and as a $8.5 billion communications giant, we need to know if it is going to be a player.

They will discuss an RFI for a hypothetical company with a New York headquarters with 400 stations and five T-1 trunks; a branch office in Hoboken, N.J., with 10 stations, five analog lines and T-1 access; and a branch office in Bakersfield, Calif., with 10 stations, five analog lines and DSL.

While the company wants to know how much it will cost for a VoIP solution, it is primarily interested in what productivity gains it can expect and how the system will support emerging technologies such as Wi-Fi phones and the ability to detect and take advantage of presence.

Each vendor will be given 5 minutes to walk us through an architectural slide and a benefits slide, and then will field 5 minutes of questions from yours truly and Carl Ford, a long-time industry veteran and VON's vice president of community development.

We also will ask one vendor to chime in on each review, with the sequence for that picked in a random draw before the event starts.

While that will eat up the bulk of our allotted time, each vendor also should come prepared with a question for one of the other players for a rapid-fire give-and-take at the end of the session. If time permits, we also will throw it open to questions from the audience.

So please join us Wednesday, Oct. 20, from 2:45 to 4 p.m. at the Fall 2004 VON Conference & Expo at the Hynes Convention Center in Boston. (See www.von.com for details.)

— John Dix
Editor in chief
jdix@nww.com

Creating a monster

Regarding Mark Gibbs' BackSpin column "Frankensoft: The monster we made" (www.nwfusion.com, DocFinder: 3425): From 1978 to 1993 I was an Apple dealer. I saw the best of times and the worst of times.

The dominance of Microsoft is as much the fault of Apple as it is the buyers who could not look beyond the letters IBM. Had Apple not been so incredibly brilliant (taking new ideas and building products around them), disgustingly arrogant (making sure that everyone knew how brilliant they were) and perpetually rudderless (not keeping a marketing plan or CEO for more than 10 minutes), we would not be in the Microsoft swamp today.

Vern Mastel
Technology coordinator
Bismarck Veterans Memorial Public Library
Bismarck, N.D.

More power to you

Regarding Mark Gibbs' Gearhead column "Networking your garden" (DocFinder: 3426): I have been running an extensive X-10 remote-control system in my various residences for the past 20 years. The main reason X-10 communication is not always reliable, something that Gibbs does not cover in his column, is that we have two separate 117V AC power circuits (phases) in our homes.

Residential power is supplied from the secondary winding of a local utility transformer as a three-wire, 234V, center-tapped feed, where the center tap is connected to earth ground. Half the residential 117V AC outlets and lights are fed from ground and one side of the 234V power line, while the other half of the circuits are fed from ground and the other side of the 234V line.

The high-frequency signals (around 100 KHz) that X-10 uses do not travel well from one side of the 234V power line to the other. This has caused many users to consider X-10 unreliable.

The solution is to install a 0.1- or 0.01-microfarad ceramic disc capacitor inside the electric panel between the two hot sides of the power line. Installing the capacitor between two adjacent breakers that are on opposite power phases can easily do this. (The two power distribution strips in the panel underneath the breakers make a zigzag down through, so the phases alternate with each, or with every second, breaker slot.) Such a disc capacitor should have a minimum 600V rating, preferably 1000V. You can find one at Radio Shack.

Once the capacitor has been installed, the X-10 high-frequency signal will be bridged between the two power phases, and your household X-10 system will work much better. You won't have to hunt around anymore for an AC outlet that is on the right power phase for it to work reliably. Also, do not plug X-10 devices into the high-end type of power bar that has built-in power-line filtering, because this will attenuate the X-10 signal.

Tore Hansen
Calgary, Alberta, Canada

Simple solution

Regarding Mark Gibbs' BackSpin column "False positives" (DocFinder: 3427): I really don't see the problem with false positives. When it comes to important items, such as a big contract, the sender is usually predictable and should already be in a whitelist of some sort. If your filter can't handle this correctly, it has a pretty basic glitch. For unpredictable things, such as orders, don't use e-mail, use a form on a Web site. I haven't yet seen a truly important e-mail this strategy wouldn't cover.

Doug Murray
Altamonte Springs, Fla.

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

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STAYING CONNECTED

Edward Horrell

Drowning in a sea of choices

How many options do we need for local telephone service? Long-distance? ISP services?

I was not surprised by how little noise AT&T's recent decision to drop out of the residential local services market and concentrate on the business market has made. Other than the few residential customers who will be inconvenienced, who cares?

The telecom field has become too crowded. The result is too many companies clamoring for pieces of the pie and having to cut back on support services just to keep afloat. Instead of having a few great companies offering world-class service and support, we have many marginal companies working hard to stay alive. I am constantly amazed at the number of clients who tell me, "They're all bad ... let's just try to select the best of the bad."

I recently moderated a panel of leading IT professionals from the Mid-South who agreed to appear before an audience consisting primarily of IT product and service vendors. The mission was to share with this audience how these buyers wanted to be sold to, from the initial call through support. Products and services discussed included local exchange carrier, competitive local exchange carrier (CLEC), interexchange carrier, ISP and wireless services; transport; telephone systems; and data network hardware.

Significantly, the IT pros considered virtually all these products and services to be commodities. In other words, they did not feel the providers offered anything to differentiate themselves other than price.

As a vocal proponent of telecom deregulation during the early 1980s, I felt that open competition would be good for a number of reasons, including faster offering of new technology and lower prices. I spoke at conferences all over the country and loudly expressed support of deregulation and the good it would bring.

While I have not changed my mind, I am concerned about the state of the industry. AT&T's recent removal of its toe from the CLEC water drives it home. While technological changes continue and new services become available, the pioneer in an area barely has time to complete beta tests before new competitors decide to get into the same market. The result is what we have today: too many choices by too many companies offering the same thing.

How many options do we need for local telephone service? Long-distance? ISP services?

If you go to a Hyatt Hotel and then to a Motel 6, you'll see a distinct difference in quality in what you will get for the price difference. But what IT vendor honestly can say, "We're more expensive but the difference in quality is measurable"? (Note that I added "honestly," as many will say, "We're the best," but have trouble showing it — there's that commodity issue again.) Please contact me and show me how your service or product separates itself from the competition. But I don't want to hear about design issues, better components or better people — show me the measurable performance difference that supports the better design, components or people.

We don't need more choices. What we need is faster, more reliable, more robust. Losing AT&T for local service is not a loss; it's just one less option.

Horrell is an independent telecom consultant, speaker and author in Memphis, Tenn. He can be reached at edwardhorrell@mindspring.com or via his Web site, www.edhorrell.com.

TELECOM CATALYST

Daniel Briere

Telecom policy gets political

The U.S. government creates confusing rules that effectively paralyze both sides of the competitive divide.

In a presidential election year, everything is up for grabs — even things no one has seemed to care about for a long time.

Telecom policy fits into that slot. Other than making vague promises about seeing broadband ubiquitously deployed by 2007, the Bush administration has shown little interest in telecom as a strategic segment of the U.S. future.

Both George W. Bush and John Kerry have delivered speeches on the importance of catching up to the world in broadband deployment — the U.S. is currently 11th — and each has a plan. Kerry would spend some government money in tax credits to encourage investment, while Bush says the free-market approach is working and is even willing to take credit for the broadband upsurge of the past two years.

What both candidates fail to realize is that there is more in play than just making cable modems, DSL or wireless technology widely available at low cost. While we are hoping to make services available today that deliver less than 1M bit/sec downstream and a fraction of that upstream, companies in Asia are offering 8M bit/sec to more than 20M bit/sec. Even in Europe, once a comfortable follower of U.S. trends, broadband access at multi-megabit speeds is considered normal.

In many cases, the broadband revolution was fueled by a government directive and government incentives, especially in Asia. South Korea, the model of broadband deployment, created requirements for the incumbent carrier and financial incentives for the competition.

By contrast, the U.S. government creates confusing rules that effectively paralyze both sides of the competitive divide. Many brush off the problem as the result of our geography. Europe and Asia are more densely populated, so loop lengths are shorter and more bandwidth can be delivered. That's a good point, but now explain Canada, whose spaces are even more wide open but which ranks well above us in broadband deployment.

And where those who crave broadband try to cautiously navigate the dumbfounding maze of regulation, there is no guarantee that the rules won't suddenly change. Take, for example, the many municipalities and publicly owned power companies that are building their own fiber-optic networks. In 12 states, they face prohibitions of one kind or another, many put in place to protect the incumbent. The landscape for the willing builders of alternative networks can be rocky and bleak.

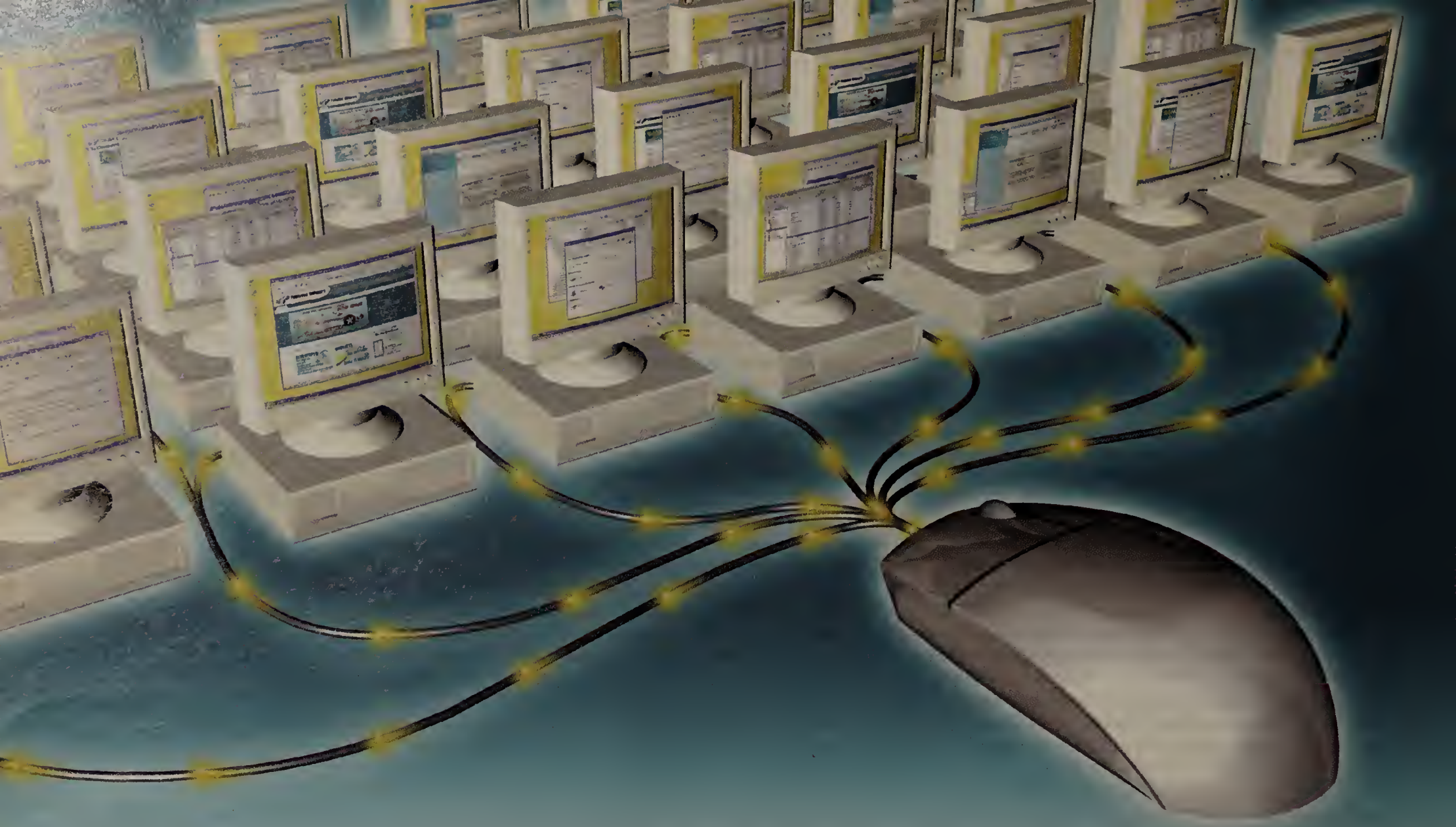
This is largely true because politicians are creatures of habit, and they have a habit of listening to lobbyists. The incumbents have many more lobbyists than any of the advocacy groups backing independent broadband network construction. In some cases, the incumbents can sway public opinion — Qwest convinced Salt Lake City that it wasn't worth joining a fiber-to-the-home consortium if it meant jeopardizing near-term DSL. The city bailed on the Utah Telecommunications Open Infrastructure Agency (UTOPIA) fiber-optic project, which is proceeding to connect 11 smaller cities.

Ultimately, falling behind in global broadband deployment will have a significant impact on our economic development, particularly in the high-technology arena. Cities such as the 11 involved in UTOPIA and Provo, Utah, which is building iProvo, its own separate fiber-optic network, see broadband access as key to their economic development and are pushing ahead, at great cost and some risk.

It makes no sense to me that our government is not only incapable of formulating policies that encourage true broadband deployment but also seems unable to get out of the way of those who would.

It will take the loud voices of those affected to begin to drown out the lobbying din of the large incumbents. There are organizations devoted to this effort — for example, the Center for Internet and Society at Stanford University has just put out an interesting treatise on the need for open-access networks. And those of us engaged in technology need to be more willing to get involved, if only out of rational self-interest.

Briere is CEO of TeleChoice, a market strategy consultancy for the telecom industry. He can be reached at telecomcatalyst@telechoice.com.



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CLEAR CHOICE TEST

Enterprise network analysis tool

Sourcefire's RNA provides instant visibility into your network

■ BY JOEL SNYDER, NETWORK WORLD LAB ALLIANCE

Sourcefire's Real-time Network Awareness Sensor 2000 is like a magic eye that watches everything happening on your network. By combining passive network analysis with a Web-based management system, Sourcefire delivers a powerful tool to IT personnel who need more information about their networks.

While RNA Sensors offer a wealth of information about the systems and services on your network, the downside is that it is up to you to make sense out of it all.

To help network managers understand the information from RNA Sensors and the alerts and events from the company's intrusion-detection systems sensors (Intrusion Sensor), Sourcefire offers the Defense Center (if purchased collectively, Sourcefire refers to the package as its 3D Product Suite). RNA Sensors and Intrusion Sensors send information to the Defense Center, which provides a central view of alerts and events, network configuration information and forensic data.

RNA Sensors sit passively on the network and watch the traffic pass by. The RNA Sensor we tested had four Ethernet interfaces, but we used only one with virtual LAN-based monitoring to give RNA Sensor visibility into different parts of our production network. While this virtual LAN capability is a great feature for a network site, if you wanted to monitor multiple sites, you'd need to deploy multiple sensors. (See How we did it, page 64.) Configuration is simple: once you tell RNA Sensor what networks to watch, it begins collecting data and populating its databases.

As RNA Sensor watches the packets fly by, it builds a model of the network topology and pinpoints the hosts on your network, the network applications they are running, and the users and devices they are communicating with. Because RNA Sensor watches every connection to every host, it also collects information about specific network flows, such as a particular HTTP connection from a client to a server.

RNA Sensor's information about our network was quite accurate. Application identification was excellent, as the sensor found obscure mail servers on non-standard ports and managed to get product and version information for most products. When it came to guessing operating systems, the results were mixed. RNA Sensor collected the least amount of information for embedded systems, such as printers and time servers.

RNA Sensor has piles of useful information — but it doesn't volunteer specific data if you don't ask for it. If you go to the dashboard, it doesn't have a big flashing light saying "Hey, look at this." RNA Sensor's "policy-free" architecture is great for the sophisticated network professional, but you've got to have an idea of what you want to know — or combine it with Sourcefire's Defense Center management console — before it becomes a very useful tool .

For example, when we got a complaint about poor performance at a site, we made an educated guess to look at the flow summary to see the top 10 connection initiators. RNA Sensor showed us a list, and the system that sat at the top of the list far outweighed any other device in the network. It had been compromised by a hacker and was actively looking for other vulnerable systems, consuming lots of bandwidth. Looking at detailed flow data from that system provided by RNA Sensor, we quickly identified the scanning pattern and even the IP address it to which it reported. When you do know what you're looking for, RNA Sensor can provide the data.

Once you start asking questions, you can customize display screens to present and summarize information and generate reports. Read about a patch for an obscure FTP server and want to know if you're running the vulnerable version? RNA Sensor will give you that information in two clicks, even if the FTP server is running on a non-standard port. Need a table of all your BSD-based hosts, along with version numbers? That takes three clicks (plus you have to type "BSD").

There are limits, though: RNA Sensor doesn't show information such as patch levels or applications running within Web servers. And it only keeps track of network server applications, not client applications, so you can't find out what Web browsers or e-mail clients users have, for example.

The Sourcefire Real-time Network Awareness Sensor 2000 mixes passive network traffic analysis with a Web-based management system to give IT personnel a complete picture of network activity.

Events and policy

RNA Sensor offers a limited policy-compliance tool kit. As the product gathers information about systems, it generates internal events. You can search the event logs at any time, or with the policy tool kit you can build rules that watch for particular combinations of events and values. When these incidents occur, RNA Sensor will send e-mail, an SNMP trap or a syslog message. The main problem with this policy-compliance tool kit is its limited vocabulary. For example, you can be alerted if a host suddenly starts running any new service, but you cannot specify that it be only a new mail service. Although you can be alerted about any RNA Sensor event, the detail is coarse enough that you'd need another tool, such as a security event manager. (See the test of these tools at www.nwfusion.com, DocFinder: 3421, to filter out the alerts.)

The true power of RNA for policy compliance and monitoring comes in the Defense Center, and this is where Sourcefire hits its stride. When RNA Sensors are connected to a Defense Center console, policy-compliance rules are evaluated on the management console, which means you can combine the results from multiple sensors when writing policy rules. That provides a greater amount of information, but it still falls

Net Results

RNA Sensor 2000

OVERALL RATING 4.05

Company: Sourcefire, www.sourcefire.com **Cost:** RNA Sensor, $11,995; Intrusion Sensor, $11,995; Defense Center, $16,995. **Pros:** Instant visibility into hosts, services and flows on your network; easy-to-use Web-based management with high-performance database; quick installation and minimal tuning; data gathering non-intrusive; has no impact on hosts or network. **Cons:** Cannot augment or modify information gathered by RNA Sensor; correlation between IDS and RNA Sensor information within the Defense Center is not very flexible or manageable.

The breakdown

Performance/accuracy 30%	4.5
Flexibility and controls 20%	3.5
Ease of use 20%	4.0
Scalability 20%	5.0
Alerting capabilities 10%	2.0
TOTAL SCORE	4.05

Scoring Key: 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Consistently subpar

NW Lab Alliance

Snyder is a member of the Network World Lab Alliance, a cooperative of the premier testers in the network industry, each bringing to bear years of practical experience on every test. For more Lab Alliance information, including what it takes to become a partner, go to www.nwfusion.com/alliance.

short of writing rules based on both RNA Sensor and Intrusion Sensor events.

Sourcefire's Defense Center does some limited correlation of Intrusion Sensor and RNA Sensor information in a feature the company calls "impact alerting." The idea behind impact alerting sounds great: match up an Intrusion Sensor alert with RNA Sensor information, and send only the relevant alerts. Unfortunately, it doesn't work well. Because RNA Sensor doesn't have perfect knowledge of what is and isn't vulnerable on the network, you have irrelevant impact alerts. While you can filter out the Intrusion Sensor alerts, which will keep the impact alerts from showing up, you can't do anything about RNA Sensor's knowledgebase: there's no way to add or modify information that will make RNA Sensor smarter about a host's services or vulnerabilities. So if RNA Sensor has misdetected an operating system or doesn't realize that a patch has been applied, you can't make it any smarter.

Unlike the Intrusion Sensor rules, which are fully customizable and visible, impact rules that correlate RNA Sensor information and Intrusion Sensor alerts together are opaque and can't be seen or individually enabled or disabled. The only detail you have is whether to receive alerts classified as "vulnerable," "potentially vulnerable," "currently not vulnerable," or "unknown." If you disagree with Sourcefire's embedded analysis, you have to suppress the Intrusion Sensor alert so that it never gets to the impact-alerting part of your management console.

Sourcefire engineers acknowledge this and are working to improve impact alerts, company officials say.

By itself, or integrated with Sourcefire's Defense Center, RNA Sensor is a powerful tool for discovering and reporting on what is happening on your network. Like many tools, what you get out of it depends on the skill of the craftsman.

Snyder is a senior partner at Opus One in Tucson, Ariz. He can be reached at jms@opus1.com.

How We Did It

We installed Sourcefire's 3D Product Suite, consisting of an RNA Sensor 2000 Version 2.0, an Intrusion Sensor 2000 Version 3.2 and a Defense Center 1000 Version 3.2, onto our production network. Sourcefire provided "release candidate" versions and installation assistance for all three products to highlight the new integration of the RNA Sensor and Intrusion Sensor information onto the Defense Center.

Tuning RNA Sensor simply means telling it which hosts to pay attention to — which networks belong to you — which only took a few minutes. To test the Defense Center integration, we had to tune the Intrusion Sensor by disabling some alerts and writing specific "pass" rules for others. We took two weeks to tune the Intrusion Sensor output, spending one to two hours per day customizing the Intrusion Sensor policy to eliminate false alerts.

Once the Intrusion Sensor output was reduced to a small number of alerts each day, we enabled impact alerts for systems the Defense Center considered "vulnerable" based on the combination of Intrusion Sensor and RNA Sensor data.

To evaluate how useful RNA was, we set out with eight tasks and looked at how hard (or easy) it was to complete them, including identifying compromised systems, reporting software and version information on mail and Web servers, alerting on newly installed systems, and setting up common queries to summarize servers and applications on a particular network segment.

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CLEAR CHOICE TEST

Oracle Collaboration Suite

Oracle's take on enterprise collaboration impresses

■ BY TRAVIS BERKLEY, NETWORK WORLD LAB ALLIANCE

Collaboration between colleagues often means sending files through e-mail and hoping they don't get lost in the ever-growing wasteland of the in-box. To solve this, Oracle offers its Oracle Collaboration Suite, a comprehensive set of tools to help companies manage information across whatever boundaries they might have.

Tools such as Web conferencing, e-mail, calendaring, file storage and content searching are provided in an environment that lets data get stored, shared and ultimately found by those who need it.

We recently tested (see How we did it at www.nwfusion.com, DocFinder: 3436) the OCS and found it to be a solid performer, offering a number of good tools that let workers share information and find data within a company. Its variety of access methods (through the Web or with a desktop client or even PDA or cell phone) also impressed us.

Building the framework

The OCS is built on the Oracle Database and the Oracle Application Server products. OCS can be accessed through a customizable Web portal, using applets to access the calendar, e-mail and other functions. Alternatively, there are stand-alone applications available to access the calendar, and various e-mail clients can connect using POP or Internet Message Access Protocol (IMAP).

Rather than install OCS ourselves, we used Oracle's Hosted Pilot program. This program lets potential OCS customers take OCS for a "test drive" (see story at DocFinder: 3358). Using the Hosted Pilot, we accessed all parts of the OCS just as if it were installed locally in our lab.

The OCS administration is very detailed. After the installation, there was a small group of administrator accounts with complete control over each applet. But additional administrators can be created within each applet. This gives the ability to grant one user the rights to provision calendar accounts, but maybe a different user to provision e-mail privileges. Or, perhaps you need different administrators for each department. OCS gives you the flexibility to assign rights in whatever ways your business requires.

The "gotcha" was in switching between different users. OCS relies on Web browser cookies to keep track of who is signed on. It is a best practice to completely close the browser, thus clearing your session cookies, before trying to switch users. This only will be an issue if you find yourself switching between privileged and unprivileged accounts, or if there is a machine that is shared among users.

Web conferencing

The first tool that one thinks of when you use the word collaboration is Web conference. OCS is no exception, offering Web conferencing with the standard array of functions such as application sharing, whiteboarding and chat.

A small console in the form of an executable is downloaded when a new user enters a conference. From there, the conference presenter can share application windows or their entire desktop. The presenter can maintain control of the whiteboard, or it can be shared with others. Public and private chat sessions also can be launched, and it has the ability to conduct polls. The presenter can coordinate the viewing of a Web page or a document that was loaded into the conference beforehand.

The Web conference feature supports streaming audio from a telephone call-in bridge. Presenters and any participants who want to talk in the conference can dial into the bridge; participants who just want to listen can do so via the streaming version from their Web browsers. This is the only option available for audio in the current version, but plans are in the works to add VoIP or audio streaming in a future version, the company says.

Overall, the Web conferencing in OCS is as good as any other product with which we've worked. The console application doesn't take up much room on the desktop, and it can be minimized to free more viewing area. It includes a nice "network connection" meter, which gauges your response times and how smooth the presentation should be. The interface is clean and easy to use.

Space to work

The next tool in the OCS arsenal is the workspace. This essentially is an area where files can be stored and shared. Each user account receives a private and public workspace. The private space is just that — only the user can access files in this workspace. Public files are accessible to any user who can authenticate into the OCS.

OCS also can create any number of workspaces for specific members to share. For example, a project team could make its own workspace to share project files. If the system administrator allows it, users can create and manage their own workspaces, inviting others to participate as they see fit. As new users are invited, they can be a Participant (add and edit files) or a Viewer (read only access).

Workspaces have storage quotas placed on them. While a workspace administrator can request to increase the quota, only the system administrator can grant it. If the space quota is exceeded, new files or updates to files cannot be added. But files can be deleted to make more room.

For Windows clients, Oracle offers FileSync, an application that replicates files from any number of workspaces down to the local machine. FileSync compares what is stored locally with what is in the workspace and then uses a WebDAV connection to synchronize changes. It is a handy way to grab fresh copies of workspace files before heading out on the road with a laptop. Upon a return, FileSync quickly can upload any changes made to the files and grab any new files that have arrived.

A business intelligence engine is also available for workflow processing. While navigation was a little difficult, it does have some very nice features. You can flag a file to be reviewed and/or approved by someone in the workgroup. The file can still be accessed, but it cannot be changed until the specified approver has released the file. When we entered the workflow piece, some of the links generated errors from time to time. Sometimes a user didn't receive notification of an impending approval. Refreshing or reloading the workflow pages again often cleared up the problem. But the most inconvenient part is that there aren't any links to return to the main portal once you are finished using the workflow applet. You have to use the "back" button in your browser or log on again.

Versioning tools are also available. These let you have a history of a document over time. As changes are made, users can save an old version, but mark the new one as the working copy. Versioning files worked slightly different depending on whether you used FileSync or did a manual upload. FileSync would upload new files, avoiding conflicts as specified. If it is set to avoid overwriting, it will add "(new version)" to the file name. When doing a manual upload, a user can generate a new version, which moves the old version into the history area.

The workflow applet is a very powerful tool that lets you create some very customized business logic.

Common tools

A workhorse tool included in the OCS

Net Results

Oracle Collaboration Suite

OVERALL RATING 4.3

Company: Oracle, www.oracle.com.
Cost: Oracle Collaboration Suite, all components: $60 per named user; Oracle Collaboration Suite, Web Conferencing: $45 per named user; Oracle Collaboration Suite, File: $45 per named user. **Pros:** Accessible from Web, desktop and other avenues; stand-alone apps support multiple platforms; flexible and granular administration; very rich set of tools. **Cons:** Workflow applet interface is different from others; Web interface is very dependent on cookies.

The breakdown	
Features 40%	4
Accessibility 30%	5
Usability 30%	4
TOTAL SCORE	4.3

Scoring Key: 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Consistently subpar

is the e-mail component. It includes everything you would expect in a Web-based e-mail client, including folder management and access to directory services. A public directory and private user address books are available to store e-mail addresses. A mailing list feature within OCS lets you create groups to send to multiple users.

For users who want to use other e-mail clients, OCS has a POP3 and IMAP4 interface. Users then can use other programs to manage their mail, as well as download mail locally to their computers. Also, address books and user directories are accessible via Lightweight Directory Access Protocol queries.

You do not have to use the e-mail in OCS if you already have a satisfactory e-mail system in place. Messages and notifications are sent within OCS via e-mail, but an external address works just as well as an OCS address.

As a Web-based e-mail system, OCS is a solid performer. Nothing flashy, but all of the basics are covered. A basic filtering function lets you create rules that can sort or file e-mail as it is delivered, read or deleted. No out-of-office replies are available, however.

The calendaring feature is referred to as a user's Agenda. The Agenda includes everything you would expect, including daily appointments, notes and tasks. Users can grant rights for other users to view their Agenda entries. You also can mark items as confidential or personal. Access to those items can be controlled separately.

For users who don't want to use the Web interface, Oracle has developed standalone programs to access the Agenda. Versions are available for Windows, Macintosh OS 9 and OS X, Linux and Solaris. The standalone versions are functionally equivalent to the Web version, but include the ability to view several users' agendas at once.

Users also can synchronize their PDAs with the agenda, tasks and notes in OCS. The Oracle Calendar Sync for Palm application is available for Windows, Macintosh OS 9 and OS X clients. A Pocket PC version for Windows is also available.

Crawling about

A tool called Ultra Search lets administrators create Web crawlers that go to specified parts of the Web and catalog what it finds. For example, you could create a Web crawler that looks over the intranet, and indexes the information it finds. The administrator can specify how deep to follow each length and the types of data to index (such as searching for only HTML and PDF files, but not JPGs or GIFs). OCS users then can search the information the Web crawlers harvested. For example, a user might search for the phrase "2004 sales catalog," and be given a list of links where information on that topic can be found.

Depending on the size of your business, this search function could be quite useful. If you routinely try to find information but have no idea what the file name might be, where it might be stored or even what type of file it is, Ultra Search could be quite useful. Only an administrator can set up a Web crawler, but all users can access the results.

Not to be overlooked is the very aggressive pricing that Oracle offers for OCS. This could make OCS particularly attractive to the small or midsize business looking to find some powerful tools without a large expense (see related story, DocFinder: 3359).

Berkley is the manager of LAN Support Services at the University of Kansas. He can be reached at berkley@ku.edu.

NW Lab Alliance

Berkley also is a member of the Network World Lab Alliance, a cooperative of the premier testers in the network industry, each bringing to bear years of practical experience on every test. For more Lab Alliance information, including what it takes to become a partner, go to www.nwfusion.com/alliance.

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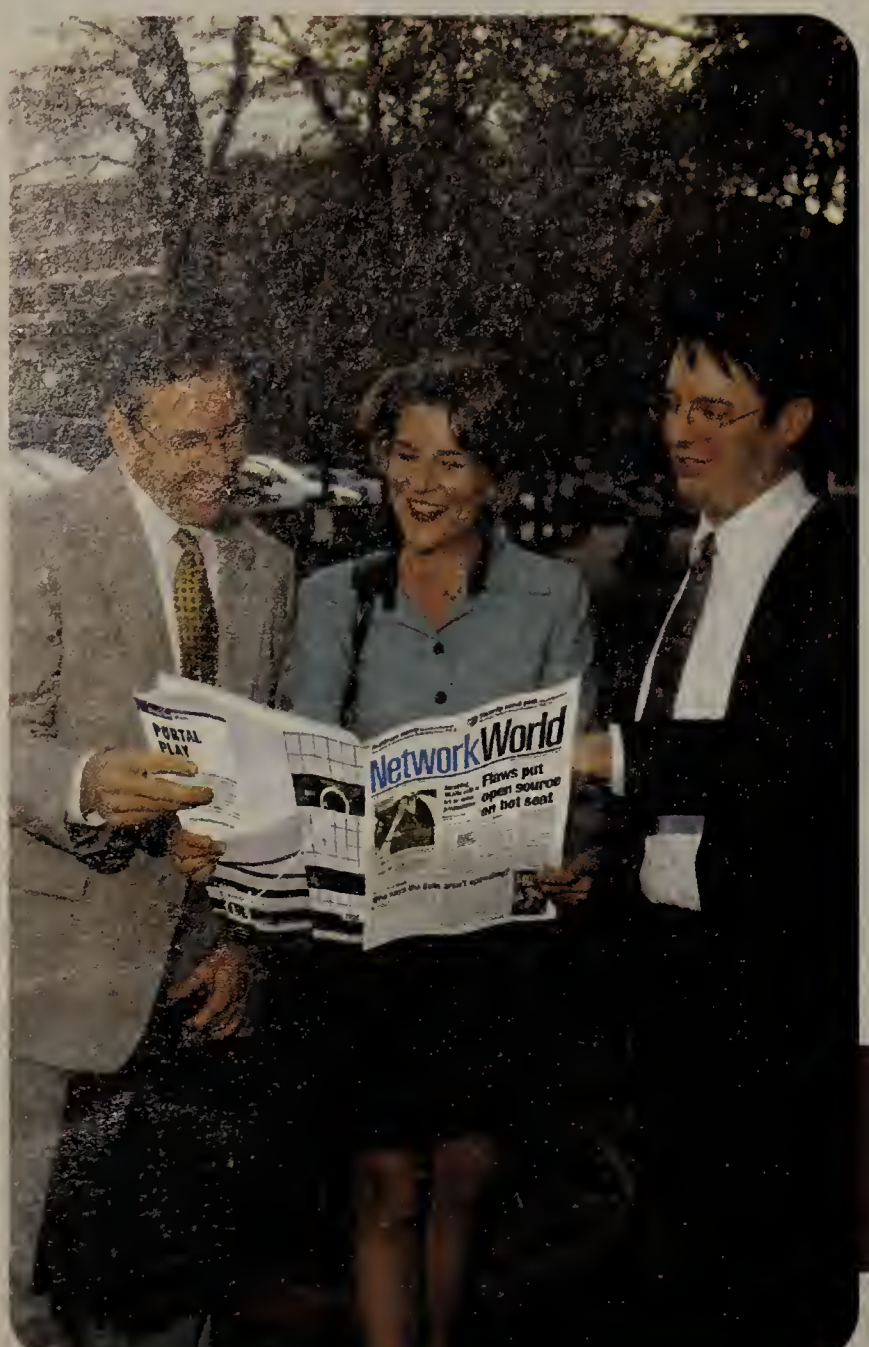

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The entrepreneur's spirit

Company founders whose start-up businesses failed live to tell the tale.

■ BY LINDA LEUNG

You have a great idea for an IT product, and you've already signed your first customer. A global services firm is willing to invest $1 million in your start-up company and plans to market your product worldwide. What could go wrong? Well, many things did go wrong for Kelly Hansen, who launched Prism as a managed security services provider in 2000 and ended up being personally liable for $5 million in debt.

Hansen paid $2.5 million to walk away from the whole affair, and is now CEO of Chicago security consultancy Neohapsis. "I've learned from my mistakes," the businesswoman says, adding that she will "always be an entrepreneur. You've got to have some skin in the game."

A tough skin, unswerving commitment and the discipline to not take on more than you can manage are some of the characteristics that separate the inexperienced entrepreneurs from those who recovered from unsuccessful start-up businesses. Their experiences illustrate missteps to avoid.

With a $2 million line of credit from a bank, Hansen launched Prism as a spin-off of Sun Tzu Security, a Milwaukee information security consultancy she established in 1996. Prism was set up to provide intrusion-detection outsourcing and firewall maintenance to a subsidiary of a Fortune 50 company, which Hansen declined to name. "The customer didn't pay us for nine months," she says. "It is terrible to rely on a single, large client that will pay when and if it feels like it."

On top of the cash-flow problem, Prism was getting nowhere with the strategic partner with which it was negotiating a $1 million investment and marketing deal. The partner couldn't figure out how to sell Prism services alongside its own and kept adding new provisions to the contract before the deal was signed. The new provisions increased Prism's debt to the partner from $1 million to $3 million. With no money coming from the customer and the bank money running out, Hansen agreed to the deal and waited for venture capital funding. However, the financing fell through when the dot-com crash occurred.

"It is terrible to rely on a single, large client that will pay when and if it feels like it."

Kelly Hansen
CEO, Neohapsis

Prism attracted other potential customers, but they had no budget to buy services after being stung by the recent Y2K fix-it hype. Prism was closed in November 2002, leaving Hansen personally liable for $5 million in debt — $3 million to the partner and $2 million to the bank.

"The good news was that I managed to negotiate the debt to the partner to $500,000 from our strategic partner and the final price tag was $2.5 million," which was a combination of bank debt and repayment to the partner. Hansen also was able to sell Sun Tzu (minus Prism) to Neohapsis.

A faltering focus

Finding paying customers was not a problem for Jet Engine Consulting, which launched in St. Louis in 2003. Its problem was that it became complacent and for about five months put all its energies into one customer. "The customer paid its bills but suddenly it told us we were too expensive and offered to buy us out and have us as their employees," says Harry Brumleve, Jet founder and president.

Although Jet's goal was to provide high-level IT consulting, its consultants had to roll up their sleeves to finish the projects they recommended. "Our company was not designed to augment staff to help finish projects. If we continued to operate like that, the same thing would happen again with other customers," Brumleve says.

The company took two days to figure out its next step. Brumleve recently negotiated a six-month contract and an 18% fee-reduction with the customer and persuaded another former client to jointly develop a software application for the airline industry. "We want to do something for us, not just help other companies live their dreams. This is part of the reason I became an entrepreneur," he says.

But being too ambitious also could bring your downfall. Spurred by the e-commerce craze, Eldad Moraru in 1999 helped set up eStoreUSA of Rockville, Md., to provide e-commerce Web site design and hosting to small and midsize businesses.

To sustain its fee of $199, eStoreUSA had developed a technology that let it build Web sites very quickly. To sustain its low rate of a maximum one-time, setup fee of $495 and a maximum monthly service of $199, the company sought to sign up 4,000 customers and employ 160 staffers by the end of 2000.

As senior vice president of business development for eStoreUSA, Moraru was responsible for snagging a strategic partner, such as domain registrar, that would help market eStoreUSA to its customers. But these companies either wanted to host eStoreUSA's technology at their own facility, which was technically impossible to arrange in a short time period; or felt that they could develop the site-building software themselves.

By March 2000, eStoreUSA began to run out of money and shut its doors at the end of the year. "We can't blame it all on the dot-com bust. Trying to get thousands of clients overnight was unrealistic," says Moraru, who is now a real estate agent. "At the end of the day, business is all about relationship-building."

"You've got to back up your beliefs with action. I was still a little nervous but I made it happen."

Pete Wilson
CEO, Telewares

Reluctant to take risks

But getting a fledgling company off the ground is often the first test of an entrepreneur's mettle. In 1986, Pete Wilson, a former Sprint and MCI senior executive, and three associates launched Telewares to develop software to help companies determine how to get the best deals from the newly deregulated carriers.

Everyone continued with their day jobs and worked in their spare time to finish the software. After about a year, it was time to raise some $30,000 for legal fees to file patents for the technology and to sell the product. But no one was willing to give up their job. "I had fear of failure. I feared that I would put my family at financial harm if it failed," Wilson says. The founders decided to put the next stage on hold for two years, but they never returned to the idea and the company fizzled out. By then, other companies began to appear with competing products.

Wilson did retain the company name, though. He worked in the telecom industry for another nine years and then decided to quit his job as director of Sprint's markets and business group to relaunch Telwares in Destin, Fla., as a telecom pricing consultancy.

"You've got to back up your beliefs with action," Wilson says. "I was still a little nervous but I made it happen. I was 38 years old, had always dreamed of having my own business, and it was time to put up or shut up." ■

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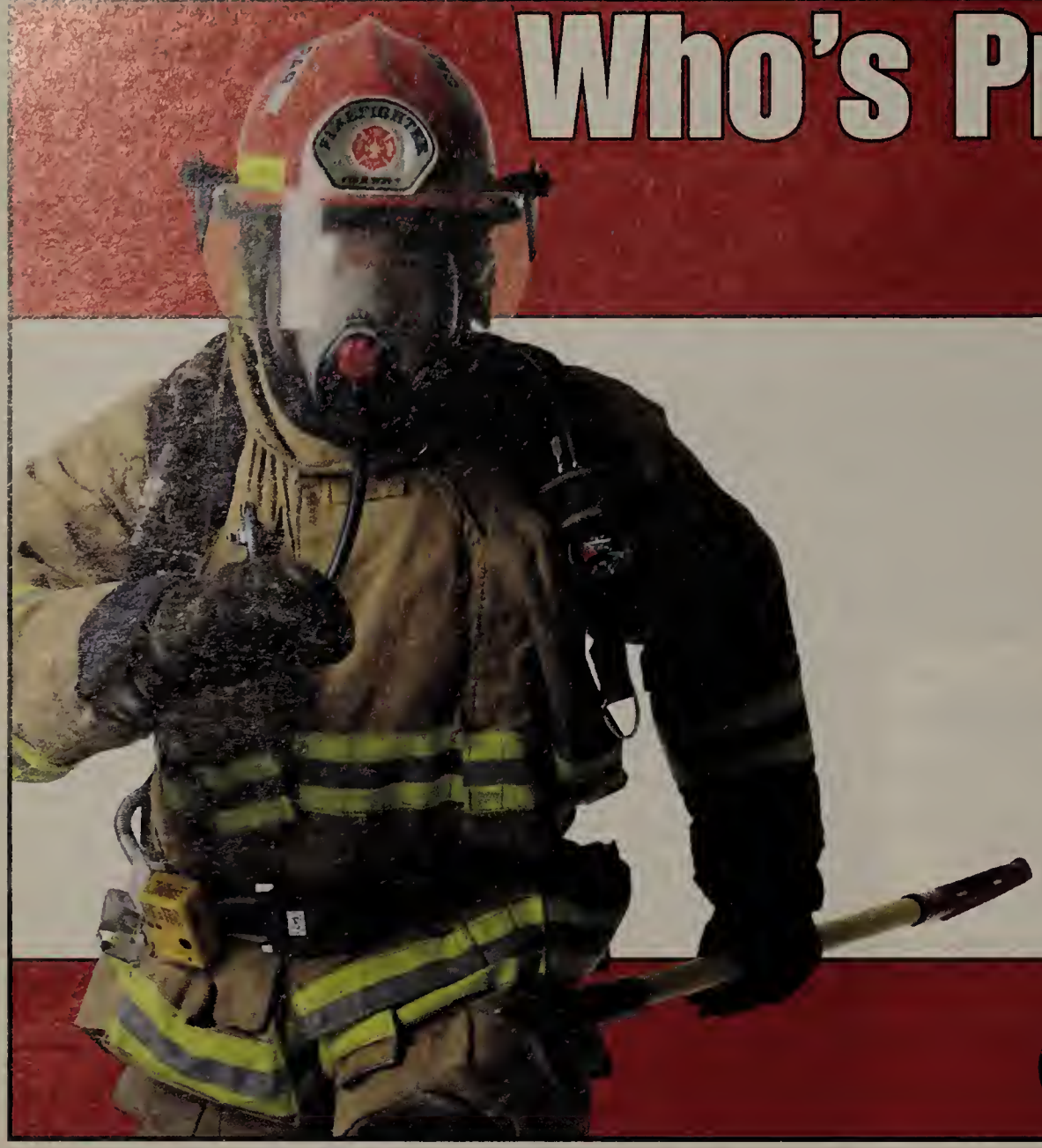

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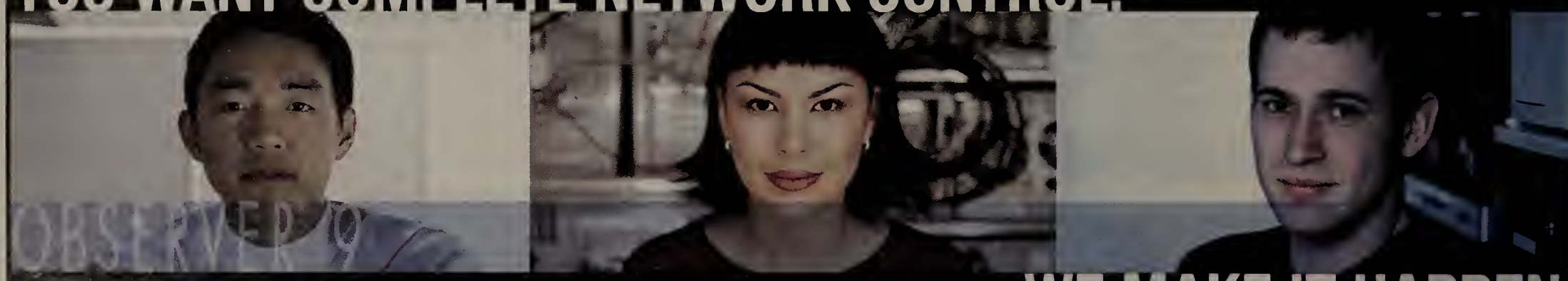

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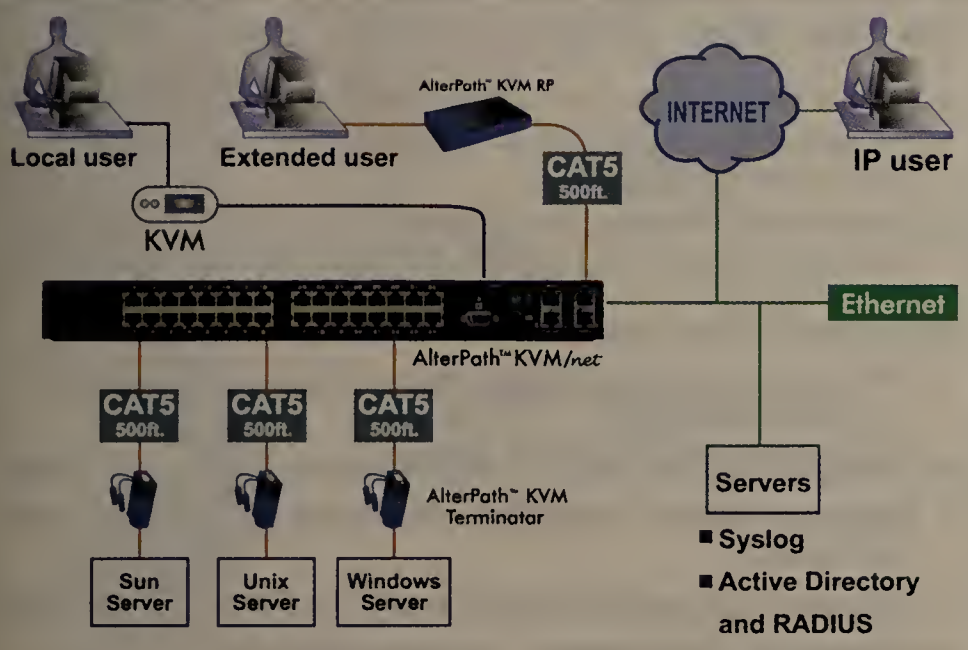

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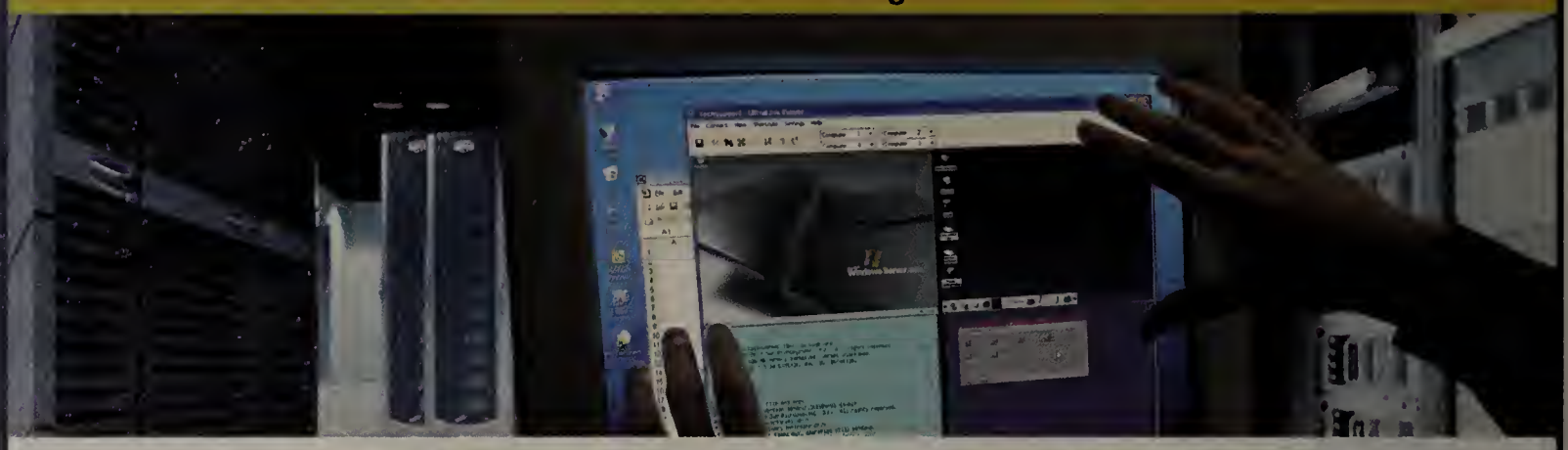

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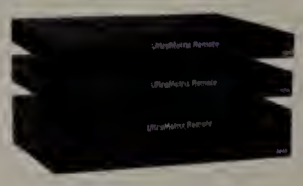

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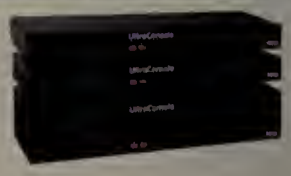

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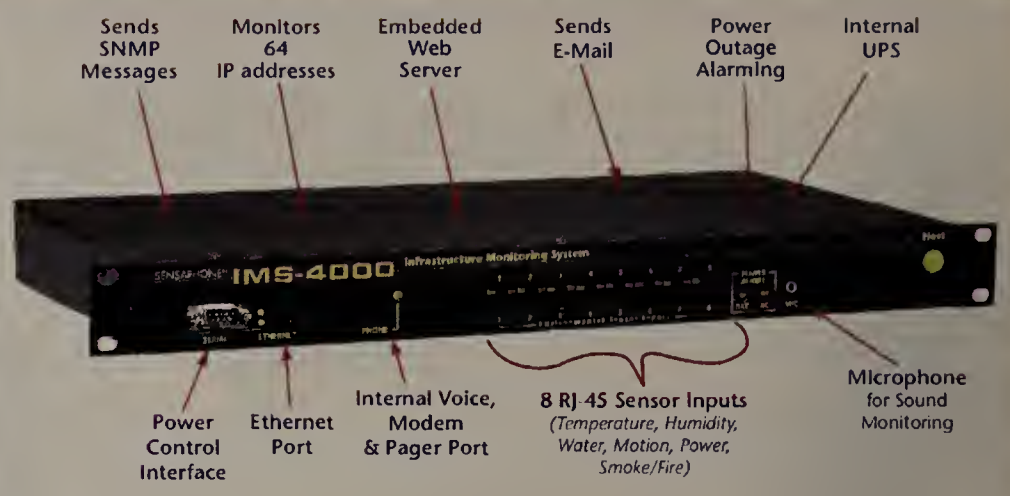

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IT Careers: Illinois, Chicagoland Bridge Old to New Industry Age

In an era past, Chicago and the state of Illinois claimed fame in meat packing, transportation, heavy machinery, brewing, and corn. Today's economy is based squarely on technology with more than 7,000 IT-specific companies and a host of heavy IT users ranging from Baxter International to Argonne National Laboratory.

While most Illinois technology companies were hiring in the hundreds in the 1990s, 2004 shows listings in much smaller numbers -- 40 to 50 specialized professionals for larger firms and five to 10 for dozens of smaller companies -- for entry level and senior management IT jobs. Allstate Insurance, long a leader in information technology use, has better than 40 IT jobs listed on its website, while food giant Archer Daniels Midland has listings that include bioinformatics, application support, analysis and opportunities for academic interns.

Among the coups for Illinois and Chicago was the announcement in fall 2003 that Chicago's McCormick Place will host the 2006 Biotechnology Industry Organization International Conference and Exhibition. State leaders point to the win as host site as an indicator of leadership in biomedical device development, pharmaceuticals, agri-science, bio remediation, and research and development innovation.

However, the region is also known for a heavy load of consulting talent, ranging from giants Accenture, Mercer and Hewitt to locally operated firms. Crain's Chicago Business lists its technology who's who as Michael Birck, soon-to-retire CEO of Tellabs; Robert Blackwell Sr., CEO of Blackwell Consulting Services, John Edwardson, CEO of CDW Corp., Richard A. Forsythe, CEO of Forsythe Technology Inc., Gale E. Sayers (yes the football great), CEO of Sayers Group LLC, and Judith A. Sprieser, CEO of three-year-old data synchronization firm Transora Inc. In addition to these home-grown IT and software development groups, the listing includes Carol Potts, area vice president for Hewlett-Packard, and Allan Duffy Gaynor, a global business segment leader for IBM.

The trend with these, and others such as Allstate Insurance, Archer Daniels Midland, Motorola and Baxter International, is in hiring people with specific, advanced skills such as IT architecture, analysis, development and disaster recovery, as well as IT support – in smaller numbers, but still hiring.

The jobs are clustered in the Chicago area, Springfield and east of St. Louis, as well as a software development core that is scattered throughout rural Illinois, including the Carbondale/Southern Illinois University region. According to John Barr, project manager for the IT Cluster in Illinois' Department of Commerce, the state's IT strength is in hardware/networking, software and data services. Software has grown at the fastest pace, with total employment increasing by better than 90% in the past decade, driven by growth with companies such as Platinum Technology, SPSS, SoftNet Technologies and Spyglass.

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Software Engineer - Applications. Sought by Englewood Colorado consulting company to work in various unanticipated locations throughout the U.S. Duties: Develop, create and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. Analyze and design databases with an application area. Use of Oracle, JavaScript, Perl, Sybase, Intershop, ASP, HTML, SQL and Windows NT. Reqs. Masters or equivalent in Computer Science, Computer Engineering, Engineering (any field) or related field. Plus 1 year in the job offered or 1 year in a related occupation, including Programmer Analyst, Internet Specialist or Programmer $75,000/year, 40/hrs/wk, 9AM-5PM. Respond by resume to WORKFORCE DEVELOPMENT PROGRAMS, PO Box 46547, Denver, CO 80202, and refer to Job Order No. CO 5086067

Senior Software Architect, Delray Beach, Florida: Analyses existing functionality and programming of current system and evaluates client requirements for new or modified software system. Within time and cost constraints analyzes, researches, designs, develops, and customizes in Unix financial applications in a client-server environment utilizing Shell Scripting, C/C++, SQL, Motif, Perl and SYBASE. Prepares, plans, develops, codes, implements and documents software systems using detailed design documents, object models and data flow diagrams including data structure, algorithm and procedure flow. Requirements: Master degree in one of the following: Computer Science/Engineering, Mathematics, Computational Science or related area and two years experience in the job offered or a Ph. D degree and six months experience. Wages Offered: $185,000 per year. Hours: 40 hrs per week: Monday to Friday, 9:00am to 6:00pm. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, Att: EH., Job Order FL-2526398

R Systems, Inc. is a global information technology services company and it has multiple Job openings for the following positions at its corporate office in Sacramento as well as Project sites throughout the United States:

- Applications Programmer
- Database Analyst
- Software Engineers
- Systems Analyst
- Network Analyst
- IT Project Managers
- Business Analyst
- Sales Engineer
- Programmer Analyst
- Sales Manager
- Database Administrators
- Market Research Analyst

Minimum requirement: Bachelor's degree or equivalent and one year experience in the job offered. All positions may involve relocation to project sites.

Submit detailed resume and position applied for to:

Attn: Venkatesh Sundararajan
5000 Windplay Drive Suite 5
El Dorado Hills, CA 95762

Control Systems Designer wanted by construction supplies mftr in IL to dsgn special controlling systms/software, dsgn/diagram structures & circuits. Provide s/ware prgm reqmt specs; eval control dsgn systm models w/physical models. Must have Bach or equiv in Comp Sci. Respond to: Mr. Bob Kuzy, Universal Form Clamp, Inc., 840 S. 25th Ave, Bellwood, IL 60104. No calls.

S/W Engineers to analyze, design business appls for SAP R/3, ABAP, Workflow, C, C++, Java, VB, Oracle, SQL, etc. under Windows, UNIX OS; analyze business processes to determine reqs & generate reports; prepare documents, flow charts and programming specs; create appl prototypes for client approval and rapid appl development; train users in business appl usage. Require: MS or foreign equiv. in CS/Engg. (any branch)/Math & 1 yr exp in IT. High salary. F/T position. Travel Required. Resume to HR, Smartsoft International, Inc., 3965 Johns Creek Court, Suwanee, GA 30024.

Computer Support Specialist

To support multiplatform computer hardware and software systems users in PC and Unix environment and maintain the company's NT Servers and website. Require B.S. in Computer Information Systems, Computer Engineering or closely related field and proficiency in both Windows and Unix operating systems and in ASP, ASP.NET & SQL Server. 40hrs/wk. Send resume &cover to HR, HGS Engineering, Inc., 1121 Noble Street, Anniston, AL 36201. Job Code: AL-KS.

Stanford Technology Partners Inc. is an IT consulting company with its clients across the USA. We seek a Peoplesoft EPM Functional Consultant. Duties include reporting tool selection; Identifying legacy system reporting & architecture; conceptual sizing of hardware configurations for Peoplesoft reporting tools; creating conceptual design docs; assisting staff on docs, identifying gaps in source system, present EPM module to mgmt and team members for review and implantation. Job is located in Tallassee, Florida or unanticipated locations throughout the USA. If interested, please send resume to: STPI, 289 Boston Tpke #6 Shrewsbury, MA 01545 e-mail: recruiter@stpincusa.com

Programmer Analyst, auto parts export. Evaluate user req & implement specialized computer programs, inc inventory, US & export, customs & fiscal req, SBT accounting system in visual fox pro language, warranty/defect control, & pricing/cost analysis/availability. M-F 9-5 $51,000 yr. Bachelor in computer field or equiv ed & exp & 2 yrs exp. Resume to Workforce Program Support, PO Box 10869, Tallahassee, FL 32302–0869. Re: Job Order #FL2544978.

IT PROFESSIONALS

Senior Consultant

(Glen Mills, PA and other locations throughout the United States). Provide professional consulting services in the areas of business process transformation and implementation of integrated software solutions to meet evolving business needs. Review and analyze client business process requirements, determine optimal integration of business process engineering and emerging information technologies, and propose strategic solutions and business process improvements including benchmarking and design analysis. Lead the design and implementation of mySAP.com EBP such as BugsEys/eMerge Catalog management tools including SAP MM (Materials Management) & PP (Production Planning), SAP Business Warehouse and SAP SD (Sales & Distribution) & WM (Warehouse Management), to provide best-of-breed functionality built for complete integration, industry-specific capabilities, unlimited scalability, and easy collaboration over the Internet. Lead the implementation of mySAP.com middleware technologies such as SAP Business Connectors, ALE (Application Link Enabling), BAPI, and IDOC to provide a program distribution model and technology that enables clients to interconnect programs across various platforms and systems. Implement project management tools and create and apply solution specific methodologies to ensure that the delivery and implementation of software solutions meets client requirements and industry standards.

$103,000/year. Mon-Fri 9:00am-5:00pm. The minimum requirements are as follows: Bachelor's degree or equivalent in Computer Science, Engineering (any), or Information Systems plus 4 years of experience in the job offered or 4 years of experience as a Senior Consultant, SAP Consultant, or Executive. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited foreign credentials evaluation service. Related experience must also include 2 years of mySAP.com EBP, SAP MM (Materials Management) & PP (Production Planning), SAP Business Warehouse, SAP SD (Sales & Distribution) & WM (Warehouse Management), mySAP.com middleware technologies & project management tools.

Please send your resume, referencing Job Order Number **WEB444883** to the: PA CareerLink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE.

QA Engineer Req #608Design and develop Dynamics quality assurance test applications using 4GL, ADM2, Dynamics Tools and distributed computing technologies. Install and configure applications in both Windows and Sun operating systems. Assist technical support personnel with product issues; validate product defects and report using internal defect tracking system. Must have B.S. in CS + 5 yrs. exp. or M.S. + 6 mos. exp. in software development. Must have knowledge of Java, XML, OOP, RDBMS, PROGRESS 4GL, ADM Tools and Dynamics. Interested applicants should submit resume to S. Fernandois, Progress Software Corp. 14 Oak Park, Bedford, MA 01730 - Equal Opportunity Employer. For immediate consideration, please visit our career page at http://careers.peopleclick.com/Client40_ProgressSoftware/BU1/External_Pages_PSC/Jobsearch.htm and apply online, referring to the requisition # for the position for which you are applying.

Jr. Programmer Analyst. Assist P.A. in researching, designing and developing s/w for integrated Business-to-Business protocol interfaces using middleware SeeBeyond e*Gate integrator suite and diverse sys. w/in an enterprise using message based brokering s/w. Test s/w on ALX servers and fine tune app. using various UNIX memory mgmt. tools.Assist in creating and analyzing data back up scripts and in UNIX. Assist in bldg. real time and batch mode J2EE comp. app. using J2EE technologies such as servlets, JSPs, JMS, JNDI, and JDBC and app. servers, which include IBM Websphere, BEA Weblogic and Apache Tomcat. Req: BS in comp. Info. Sys., comp. Sci., or related area. 40hrs/wk. Job/Interview Site: Des Moines, IA. Send resumet to Chuck Gutta, Emprise Consulting LLC @ 2915 Redhill Ave. # F202, Costa Mesa, CA 92626.

Jr. Programmer Analyst. Assist P.A. in researching, designing and developing s/w for various business problems using J2EE and object-oriented design principles and technologies incl. UML and Waterfall models, and RUP process. Assist in testing s/w solutions using Java, J2EE, JSP, Struts, Servlets, Swing on Unix and windows NT. Assist in developing s/w for SQL Queries and stored procedures on SQL Server and Oracle. Provide test cases and other doc. in CMM 5 standards. Req: BS in comp. Sci., Comp. Eng., or Elect. Eng. 40hrs/wk. Job/Interview Site: De Moines, IA. Send Resumes to Emprise Consulting LLC, Attn: Chuck Gutta, 2915 Redhill Ave., # F202, Costa Mesa, CA 92626.

Seeking qualified applicants for the following positions in Collierville, TN: Senior Project/Process Analyst. Perform project planning and analysis and provide project leadership for IT projects, processes and/or on-going programs. Requirements: Bachelor's degree or equivalent* in business, computer science, MIS or related field plus 5 years of experience in planning, project management or process analysis of IT projects. Experience with: either SQL, ASP or CSP; either Crystal Reports or Crystal Enterprises; and Windows 2000 Server also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Roger Wright, FedEx Corporate Services, 80 FedEx Parkway, Room 108, Collierville, TN 38017. EOE M/F/D/V.

Principal Software Engineer: Primary responsibility for the development of networking software. Responsible for functional spec dev, arch design, implementation and verification. MS or foreign equiv. in EE or CS plus 5 yr. exp. that must include 3 yr. with one or more network protocols including IP, TCP, ARP, DHCP, DNS, SNMP,and firewall. . Must be familiar with IP QOS protocols and RFCs. Must have development exp. with Linux. and in C/C++ Please send resume to Ucentric Systems, 2 Clock Tower Place, Suite 550, Maynard, MA 01754. Attn to Pat Riley.

Business Analysts to gather, analyze, document, propose systems solutions; lead JAD sessions to analyze, define user business reqs, process descriptions, use cases, scenarios using rational rose, visio etc.; re-engineer business processes/procedures, define/document data models using SSAD, OOAD, RUP methodologies; analyze system performance to understand exceptions, anomalies, problem areas; provide direction/assist project teams; Require Bachelors in Business/Mgmt/CS/Engineering with 2 yrs or related exp. Competitive salary. Travel involved. F/T. Resume to: HR, Bahwan Cybertek Technologies, Inc., 209 West Central Street, Ste 312, Natick, MA 01760.

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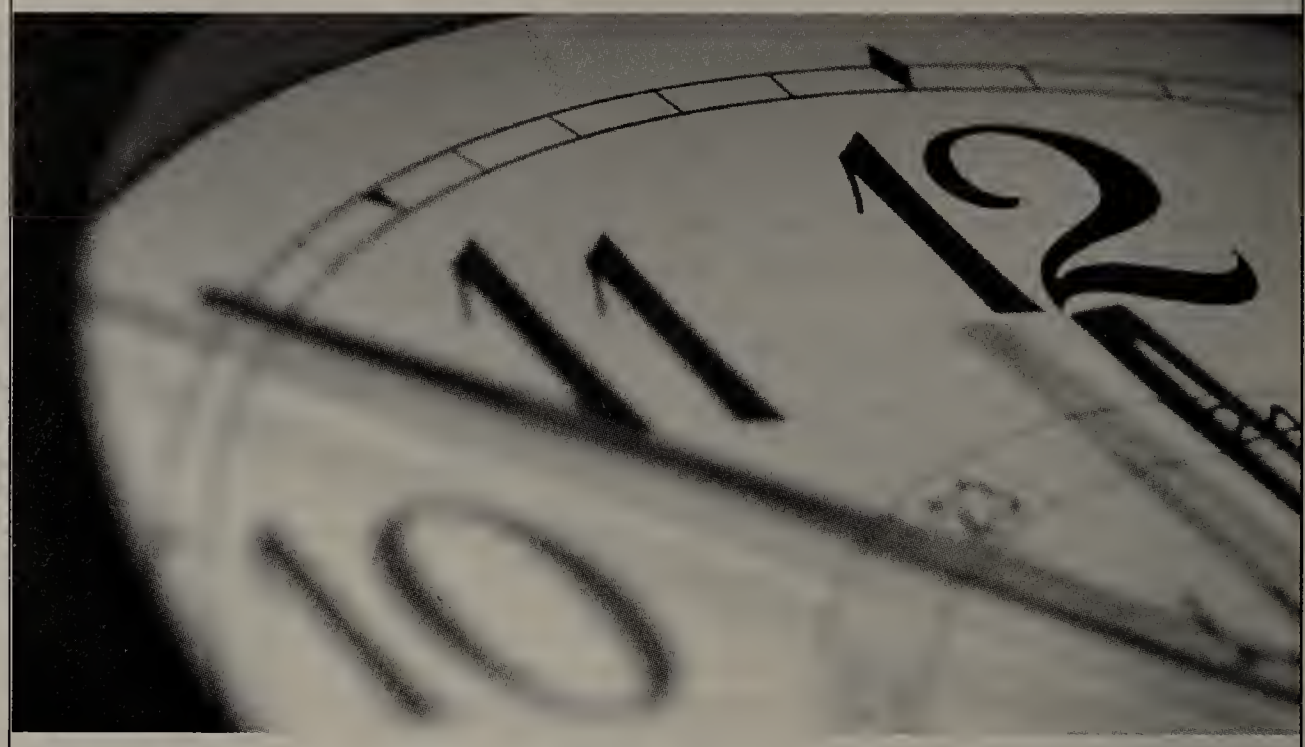

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SOFTWARE ENGNR, APPLNS

Dvlp, create & modify web-based computer work sys. following a life-cycle full dvlpmnt protocol. Dsgn customized applns to optimize operational efficiency. Analyze & dsgn appln dbases. BS in Comp. Sci., Electrical or Electronics Engnrg reqd + 3 yrs exp. in position offered or as a Software Engnr or Prog. Analyst. Exp. must incl. Microsoft.net tool technologies like ASP.net, C#, VB.net, SQL Server 2000, XML/XSL utilizing IIS & component dsgn & dvlpmnt using Visual Basic/C++. 40 hrs/wk, 8am - 5pm, OT as reqd, $66,730/yr. Submit resumes to: Mon Valley Regional Career-Link, Attn: Actg. CL Program Supervisor, Donora Industrial Park, 570 Galiffa Drive, Donora, PA 15033. Refer to Job Order No. 445142.

Senior Programmer Analysts to lead teams to analyze, design, develop, implement appls using SAP, C, J2EE, JSP, RMI, Websphere, Weblogic, and EAI tools like Mercator, Sybase, Vitria, Webmethods, etc under Windows/Unix OS; responsible for data modeling, gap analysis, etc; involve in system/business analysis; develop functional specs based on business reqs; design, develop interfaces and perform integration of various modules; test team members/train end users. Require: BS or foreign equiv in CS/Engg. (any branch) & 3 yrs exp in the IT field. Travel involved. F/T position. competitive salary. Resume to: HR, Koneru Software Services, 333 Swanson Dr., Ste 124, Lawrenceville, GA 30043.

Multiple openings for Programmer/Systems Analysts, Software Engineers: Must have BS in Com Sci or rel field plus 2 yrs exp in requirement analysis, Design and development, resolving the technical issues W/exp in two or more of the following skills: Oracle Applications (GL, AP, AR, FA, PO, INV, OM, CM, BOM modules ver 11/11i) Oracle Reports, forms, Discoverer, Unix, Solaris, C/C++, JAVA, XML, PeopleSoft, Cognos, Win/Load Runner, DB2, PLSQL, MS-SOL, Sybase, PB, VB, ASP, .net & Windows. Resumes to Z3 Technologies Inc., 11400 W Bluemound Rd, Wauwatosa, WI 53226.
emails: resumes@z3tech.com

Programmer Analyst: program, implement, edit, and maintain user application programs. Trouble-shoot, compile and document program development. Req. Bachelor's degree or foreign equivalent (based on education or work experience, or both) in CS, CE, Electrical & Electronic Engineering, MIS, ME, Electronic and Communication Engineering or related field with proficiency in either Baan, Oracle Financial ERP, Java/Weblogic/Websphere, Informatica, Siebel or C++/Corba. 40hr/wk, 9:00 a.m.- 5:00 p.m. Send resume to Visionsoft International, Inc., 1842 Old Norcross Road, Suite# 100 Lawrenceville, GA 30044

Need IT Professionals like Software Engineers, Programmer Analysts, IT Business Managers for company based in Bristol, PA. MS/BS Degree or equivalent in C.S, CIS, MIS, Engg (any), Math, Phy. / rel field and/or rel. work exp. All positions may involve travel &/or relocation to project sites throughout the U.S. Mail resumes to HR at Systems People, Inc., 1200 New Rodgers Road, C 7B, Bristol, PA 19007. State the post applied for.

Database Consultant/Software Engineer to serve as senior consultant to provide strategic tech. leadership for data architecture across Co's systems & market data services. Will initiate, plan & implement complex database development projects, providing direction for DBMS operational & warehousing methods & tools; research DBMS technology; recommend changes in project development methods & strategies to architects & management. Requires Bachelor's or equiv in C.Sc., Engineering, Math, or Physics plus 6 yrs exper in job offered, OR 6 years in Database Administration; Alternatively, will accept No degree plus 8 yrs of exper in job offered, OR 8 yrs in Database Administration. Candidate must also possess demonstrated expertise in DB2 administration, incl. UDB, AIX, and SOLARIS, and UDB replication in a zero latency environment; demonstrated expertise in ORACLE administration, including PL/SOL programming, performance tuning & optimization; and demonstrated expertise in strategic data architecture, including actuate reporting, ETL tools & operational data storage analysis. Sal: $94,750/yr, M-F, 9A-5P. Send 2 resumes to Job Order #2004-226, P.O. Box 989, Concord, NH 03302-0989. EOE. Applicants must be U.S. workers eligible to accept full-time U.S. employment.

IndusValley Consultants, Inc., is a global IT systems integration and solutions firm has openings for the following: Software Engineers: Research, Architect, Integrate distributed applications utilizing various software's such as SAP R/3, Clarify, Siebel, Oracle Apps, Visual Basic, Java, Tibco. Provide leadership to complete design solutions, write code, perform testing, provide documentation, and implement development projects. Need Master's Degree in Computer Science or related and 2 years of experience. Programmer Analysts: Plan, test and develop web applications for ERP and, CRM packages. Design and develop client-server applications using Java, ASP, VB, C, Clarify, Siebel and AutoCAD2002. Interact with clients to design the functions of software according to client specifications. Need Bachelor's Degree in Computer Science or related and 2 years of experience. Send resume: HR Manager: 401 E. 8th St., Ste. # 200Y, Sioux Falls, SD 57103.
E-mail: sam@Indusvalley.com
fax: 800-440-1907.

IT PROFESSIONALS

Senior Consultant/Technology Solutions

(Glen Mills, Pennsylvania and other locations throughout the U.S.). Design and implement leading business application software to provide solutions for clients focusing in the manufacturing and consumer business industries. Engage in design and implementation of process and technology solutions for supply chain optimization, production planning and scheduling, quality management, business to business, customer management and business intelligence. Scope and plan functional requirements along with design, development, customization and implementation of applications using SAP R/3, SAP Business Intelligence and SAP Industry Solutions and customization of supply chain optimization using i2 technologies.

Salary $77,126 per year. Mon-Fri, 9:00 am to 5:00 pm. The position requires: Bachelor's degree in Computer Science, Computer Engineering, IS, MIS or related + 2 years of experience in the job offered or 2 years of experience as Technical Consultant, EPR Integration Engineer, SAP Production Engineer or related occupation. Related experience must include utilization of configuration, development and business technical data warehousing skills and include SAP R/3, SAP Business Intelligence, SAP Industry Solutions and i2 Technologies.

Please send your resume, referencing Job Order Number **WEB444831** to the: PA Careerlink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE.

NovaSoft Information Technology Corp., a sftwr consulting firm & web development co., is seeking a Programmer Analyst to work in the Minneapolis area who will be respons. for dsgn, dvlpmnt & implem. of client/server appl. sftwr using current IT skills. AS in Comp. & Info Sci., Chemistry, Math, Busns or Engrg & 2 yrs exp. as Prog. Analyst, Sftwr Engr, Sftwr Consultant or Proj. Mgr rqd. Must have 2 yrs exp. w/ Arcnet/Ethernet protocols, CSMA/ CD protocols, WAN solutions (PC Connect & Netware), TCP/IP, Win NT & IPX/SPX, & 2 yrs exp. w/user & busns requirements analysis. Excel. salary/benefits pkg. Send resumes to: NovaSoft Information Technology Corp., ATTN: HR Dept., 8400 Normandale Lake Blvd, Ste 920, Bloomington, MN 55437.

Vensai Technologies has the following openings for individuals to work at client sites throughout the U.S.: Application Developer with exp in EDI, Java, Websphere, DB2, Mercator; DBA with exp in DB2, Oracle, Solaris, Siebel and Decision Support Products; System Analyst with exp building n-tier static/web applications, Cold Fusion, CFMX, HTML, JavaScript, CSS, Oracle, SQL; System Programmer with exp in DB2 stored procedures, C, C++, Cobol, Java, MVS Internals, JES2, OS; System Analyst with exp in C, Peoplesoft, RTOS, pSOS/vxWorks, Texas Instru-ments, DAC's and ADC's; Software Engineer with exp in Clarify modules, Java, EJB, JSP, Weblogic, Oracle, J2EE, MQ Series, Tuxedo, Rational Rose, ClearQuest, Clear Case; PeopleSoft Java Programmer with exp in Peoplesoft, Java, Oracle, Discoverer, Developer; Client Server Software Engineer with exp in eCRM packages, Siebel, Vantive and Onyx. ETL Programmer Analyst with exp in ETL tools in large scale Data Warehousing Projects, SOL, Oracle, DB2, Solaris and Rational Tools. All applicants must have B.S. in Computer Science, Engineering or related. Apply to: Vensai Technologies, 20 Trafalgar Square, Suite 400, Nashua, NH 03063.

IT Professionals, exp'd, sought by a Software Consulting Co., in any of following areas (i) J2EE Architecture, weblogic or iplanet, JavaScript & XML/XSLT (ii) Oracle Forms, Reportwriter & Database Dsgn (iii) Lotus Notes, SDLC, PVCS VM, Tracker relational d/bases & IBM MQ Series (iv) Datawarehousing applics using Informatica, Powercenter, Powerconnect, Cognos Reportnet & Metrics/Framework & (v) C, C++, ASP, VSS, SOL Server, XML & .Net. BS in Comp Sci, Eng. or related field. Applicants must be willing to relocate/travel to various unanticipated locs throughout US. Resume to DatamanUSA, Attn. HR, 315A West Lincoln Way, Ste 15, Cheyenne, WY 82001 or email to jobs_wy@datamanusa.com

IT PROFESSIONALS

Senior Consultant

(Glen Mills, PA and other locations throughout the United States). Responsible for Siebel software development tasks associated with the design and development for customization of Siebel applications. Develop Siebel objects including creation of business components, business objects, applets, views and screens. Develop Siebel Enterprise integration objects enabling Siebel to integrate with other systems including SAP and Oracle utilizing Siebel Enterprise Integration modules. Create integration objects, workflow processes and data mappers and develop business services to incorporate the required logics. Test workflows and utilize various Siebel connectors and adapters enabling Siebel to communicate with middleware technologies and other applications. Utilize Siebel Enterprise Integration Manager to load data into Siebel from other legacy or source systems. Prepare data sheets as per table requirements, write control files, run SQL loader scripts to load data in the interface tables and create server tasks to run the Enterprise Integration Manager process. Develop strategy documents for proposed technical solutions, design deliverables, develop documents, and write test scripts and test plans. Responsible for the scoping and mapping of operational reporting requirements to Actuate Siebel reports with report parameters/filters, and design the Actuate Siebel reports. Lead data integration, and oversee data conversion and application configuration efforts including leading a team of Siebel developers. Perform the analysis of existing business and system use cases and requirements documentation. Perform accurate analysis and effective diagnosis of client issues and oversee day-to-day client relationships on client engagements. Implement project management tools and create and apply solution specific methodologies to ensure that the delivery and implementation of software solutions meets client requirements and industry standards.

$82,650/year. Mon-Fri 9:00am-5:00pm. The minimum requirements are as follows: Bachelor's degree or equivalent in Computer Science, Engineering (any), Information Systems, Mathematics, or Business Administration plus 5 years of experience in the job offered or 5 years of experience as a Senior Consultant, Consultant, or Software Engineer. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited foreign credentials evaluation service. Related experience must also include at least 1 year of Siebel application development, Siebel enterprise integration development, utilization of Siebel Enterprise Integration Manager, integration of Siebel with other applications including SAP or Oracle and development of Actuate Siebel reports.

Please send your resume, referencing Job Order Number **WEB444901** to the: PA CareerLink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE.

Enterprise Business Solutions, Inc. EBS, Inc. has several permanent positions open for Software Developers, Computer Programmers, Software Engineers, Systems Analysts, Quality Assurance Engineers, Programmer Analysts, GUI Programmers and Technical Recruiters with strong skills in several of the following: • Informix, Sybase, Oracle, DB2 •Powerbuilder/VB/VC++/C/C++ /Java • Windows NT/ Unix Admin • Mainframe/Cobol/CICS/AS400/RPG • PeopleSoft, People Tools, SOR, Oracle • Testing/Winrunner/Silk/Rational/QA Run • CORBA/COM/DCOM • HTML/ASP/JSP • SAP R/3, ABAP 4, MM, SD, FI, EDI, ALE. Full time positions among our offices and client sites on an ongoing basis. Please send resumes to: Enterprise Business Solutions, Inc., 1329 West Irving Park Rd., Suite 301, Bensenville, IL 60106. An EOE

MagnaQuest, Inc.

Programmer Analysts: Design, develop and test Internet based programs for EBPP packages, Electronic Billing Presentation and Payment. Design client-server applications using JAVA, EJB, NetDynamics and Oracle. Interact with clients to design the functions of software according to client specifications using Unix, C++, Corba, XML, UML, WEBLOGIC 7, testing tools. Req. Bachelor's degree in Computer Science or Engg. and 1 year of exp. Send resume to: HR, MagnaQuest, Inc., 16219 S. 31st Way, Phoenix, AZ 85048. E-mail: mqusa@magnaquest.net.

System/Programmer analysts, IT engineers needed by E IT professionals, Inc. to design system applications to meet client's requirements using Java, Oracle, VB, Web Tech, Unix, SQL, SAP, JSP, J2EE, MS Tech, etc. BS/MS with IT exp required. Contact pete@itprofs.net. EOE. No calls.

OTS (Object Tech Solutions) has multiple openings for IT professionals (software engineers, system/program analysts, DBA, etc) to design and develop applications using various skills such as VB Oracle, Java, WebSphere. SQL, SAP. Req MS/BS with exp. Contact resumes@otsi-usa.com. EOE.

Systems Analyst w/SCSA needed at client sites to dsgn, dvlp, code, test, debug, modify & implmt prgms; provide Tier 3 support of Web, Mail, DNS & provisioning Internet services; dsgn & implmt high-availabLe Unix systms; tools incl: JDK, Perl CGI, HTML, Veritas Volume Manager & Cluster Server, Netbackup, CheckPoint Firewall, Cisco Routers, Foundry Switches, TCP/IP networks, Sun E420, SunE250, Solaris, RedHat, Oracle, Sun StorEdge A5200, NETApp F760, DNS, NIS & NFS. Apply to: Global Consultants, Attn: Hireme, 25 Airport Rd, Morristown, NJ 07960.

Computer Programmers needed. Seeking qual. candidates possessing BS or equiv. and/or rel. work exp. Part of the req. rel. work exp. must include 2 yrs working w/ Java and XML and 1 year working with .Net; experience can be simultaneous. Duties include: Develop & write programs; Configure HW/SW; Analyze & implement remote control of Software packages. Work with Java, SOL, Linux, .NET, & XML. Send res., ref. & sal. req. to Applianz Technologies, 322 S. Mosley, Wichita, KS 67202.

Systems Administrators to plan, design, install, maintain and administer LAN/WAN networks; install, configure, administer Windows NT, IIS & SQL Servers; maintain backups and provide support for users; create, maintain user accounts; manage communication systems including Mail servers; evaluate new/existing systems, recommend future IT strategies. Require: BS of foreign equiv. in CS/Engg.(any branch)/Buss. with 2 yrs exp. in Sys Admin./Sys. Mgmt. F/T. Travel Involved. High Salary. Resumes to: HR, Fourth Technologies, Inc., 585 Tollgate Road, Ste I, Elgin, IL 60123.

Sage IT is looking for IT professionals to develop applications using Cognos Impromptu, PowerPlay, ReportNet, SQL, Oracle, Tera data (NCR), Sybase, Esbase, DB2, Red Bricks, Informatica, Data Stage, Ab Initio, Web Logic/Sphere, JSP, ASP. Min. BS w/ exp. Please contact info@sageitinc.com. EOE

Global Consulting is looking for programmer/system analysts, software engineers. Candidate must have BS with IT experience. Good skills in C/C++, Java, Oracle, EJB, J2BB, WebLogic, VB, HTML are plus. Traveling is required for some positions. Apply job@g-c-g.net EOE. No calls.

Systems Analyst sought by large employer in Electronic Print Svcs Industry. Reqs BS in Engg, CS or MIS. Min. 2 yrs IS exp in a high speed digital print technology envrmt & using document print/print image formats incl Xerox Meta/code & DJDE, IBM AFP, Adobe PDF, fonts, barcodes, font edit tools, document dsgn tools. Min. 2 yrs exp using Process Automation on multiple platforms (IBM MVS, Window, Unix, HS Printers). Min. 2 yrs exp w/VC++, VB, MS Access, SQL, MicroTech, IMR Alchemy, Elixir & CompuSet. M-F 8-5. Respond to Scott Erickson, HR Mgr, Moore Wallace, Business Communication Svcs, 630 W. 1000 North, Logan, UT 84321.

eToys Direct seeks applicants for the position of Web Applications Developer in Denver, CO to design and develop custom web-based software applications. Requirements include bachelor's in computer science or related field and experience in designing and developing web-based applications. Requirements also include working knowledge of TCL/TK, Expect Programming Language, Oracle Development and Python Scripting Language. Respond by resume to Gigi Healy, eToys Direct, 1099 18th St., #1800, Denver, CO 80202.

Database Aps Engr - Design, develop, & impl. RDBMS util. SOL & multi-tiered distributed apps util. VB, ASP, & HTML/XML to run on Windows NT o/s. Provide on-site info. systems consulting to corp. clients in order to maximize info. system efficiency. REQS: MS in CS, Math, Physics, or any Engineering discipline, + 2 yrs of exp in job offered, or 2 yrs of exp as a Database Admin. or Database Design Analyst. Salary: $65,000 to $80,000, DOE. Incl. benes, 40 hrs/wk. EOE. Job loc: Various unanticipated locations throughcut U.S. Apply by resume only to: Job #CO5087982, Workforce Development Programs, P.O. Box 46547,Denver, CO 80202.

Computer Support Specialists - needed for various unanticipated locations in US to support clients' technical efforts in building and configuring computer systems, performing network admin and hardware troubleshooting. BS in Mechanical/Electrical Eng reqd. 40 hr/wk, $20+/hr. Send resume w/ ad to Ms. Shipe, OAO Services, 2266 South Dobson Rd, #209, Mesa, AZ 85202.

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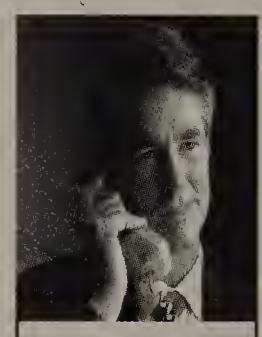

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Outsource

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turn to outsourcing because they want to use their security staff to address security needs for e-commerce and VPN and Web applications — the let-the-good-guys-in sort of stuff to connect with customers, partners and employees," says Kelly Kavanagh, a principal analyst at Gartner.

"The routine monitoring and maintenance of firewalls and monitoring of [intrusion-detection system] traffic for alerts are things they're finding have a great impact on their staff time and is something they can give to somebody who does that 24-7," he says.

Since the beginning of the year, clients have had more questions about outsourcing security and more are on the brink of contracting with service providers, Kavanagh says, adding that "the question now is 'who,' not 'whether' or 'if.'"

Still, analysts note that the move to outsource security functions is a slow one. One reason is that the so-called managed security service provider market continues to consolidate — Level 3 Communications acquired Genuity early last year, and VeriSign snapped up Guardent in February this year — leaving some enterprise customers wary about contracting with a firm that might not be around in a few months.

Gartner expects consolidation to continue as smaller players band together to compete with larger providers and those large firms seek to expand their security expertise through acquisition.

In addition, companies for a variety of reasons are still reluctant to hand off security functions to outside parties.

Willis Marti, associate director for networking for computing and information services at Texas A&M University in College Station, says increasingly complex security needs linked to proliferating viruses, patch management and other issues actually make him more likely to keep security in-house.

"The more complex the task, the more difficulty in structuring an agreement with an outside party," say Marti, who oversees a network that connects more than 60,000 users. "Security has to be provided in the context of business operations. . . . There is almost no chance we'll do any outsourcing of security functions. Part of the reason is a special expertise we have, part is because I'm not aware of any really successful outsourcing, and part is the close-to-unique nature of a major university."

John Halamka, CIO of Harvard Medical School and CareGroup Healthcare System in Boston, began outsourcing network security monitoring to Counterpane in 2001, but brought those functions back inside the organization last year.

"Because we're a healthcare organization it was essential to develop a core competency in doing network security," says Halamka, who estimates his network is attacked about every 7 seconds on average. "With [the Health Insurance Portability and Accountability Act], we wanted to have our own internal staff who could be extraordinarily vigilant and fleet of foot to respond to issues instantaneously and constantly advise how to improve our infrastructure to guard against ever-wily hackers."

It was access to this type of advice that was part of the reason why financial publisher Bowne & Co. in New York outsourced its IDS monitoring to Internet Security Systems (ISS).

"We have a good mix of in-house expertise and good standard operating procedures and a service that has been reasonably priced and has given us access to additional expertise that has been quite helpful," says Ruth Harenchar, Bowne's CIO.

Last month, Credit Suisse in Zurich, Switzerland, announced that it was outsourcing security for the first time, entering into a three-year contract with Ubizen to monitor the bank's IDS.

"Monitoring and administering an intrusion-detection system in a complex IT environment requires specialized know-how, which must be available 24-7 and continuously updated," says Ralph Holbein, chief information security officer for Credit Suisse. "This is very challenging as well as costly and, obviously, not a core function of a financial institution."

Holbein wouldn't say how much Credit Suisse is saving by outsourcing its IDS monitoring, but says that having access to Ubizen's expertise will "increase the quality and effectiveness of our security." Savings come from being able to reallocate IT staff, eliminating the need to add IT staff as security needs increase, for example.

That's what EMI was looking for when it outsourced some of its security functions about a year and a half ago. The music giant in New York found that as its online business grew, so too did the demands on its internal IT staff.

"We had put firewall technologies in place and we were managing them ourselves, but we weren't happy with the service level we were able to provide internally," says Jim Russo, senior director of network services at EMI.

So the company turned its firewalls and related technology, such as intrusion detection, over to ISS.

"While we're the largest pure music company globally and operate in 50 countries, we're on a very thinly funded model," Russo says. "The ability to run true 24-7 operations with rapid response to the changing Internet environment was more than we could budgetarily design. We had to look at partners."

For Gene Fredriksen, vice president of information security for Raymond James Financial in St. Petersburg, Fla., the point of outsourcing IDS with VeriSign is to augment his internal security procedures. VeriSign handles some IDS monitoring for Raymond James, but IDS monitoring also is conducted internally.

"One of the things that is important for information security is to do external validations and expand the sphere of intelligence that you gather," Fredriksen says. "If all your security functions are internal and you don't have a metric for someone to look at you from the outside, you're missing a big piece."

Theresa Grant, director of information security at Dow Chemical Company in Midland, Mich., says the bottom line is that companies can expect benefits from outsourcing security because of the expertise they'll gain access to, but that they have to be vigilant about how the service is delivered.

"Companies should ... consider their decision to outsource security in terms of their organization's overall outsourcing strategy, and determine if their internal audit organization has the tools or capacity necessary to manage the outsourcing relationship," she says. "Companies can't take for granted the importance of monitoring activity; provisions must be made to ensure that companies get the services they are paying for." ■

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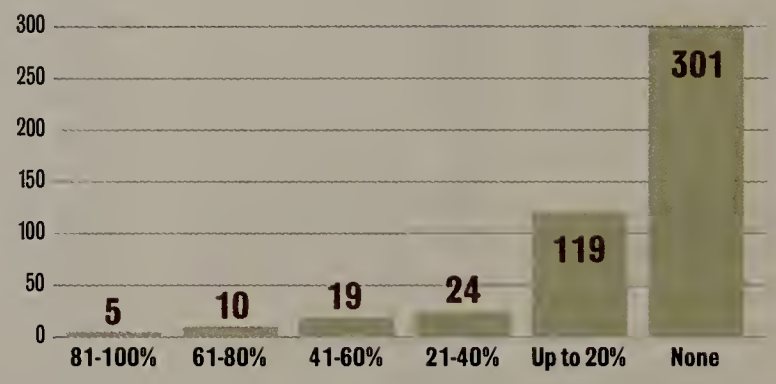
Handing off security

For the first time, the Computer Security Institute/FBI Computer Crime and Security Survey took a look at whether companies are outsourcing security functions. What they found:

Number of companies and what percentage of security functions they outsourced in 2003:



SOURCE: CSI, 478 "SECURITY PRACTITIONERS" RESPONDED

Separation anxiety

Reluctant to do so in the past, enterprise users are considering handing off security functions to outside providers. Some things to consider:

Pros:

- **Time saver:** Figure what can be safely handed off — intrusion detection, for example — and then deploy IT resources on more-critical security issues.
- **Ready reports:** A service provider can get an audit and reporting process up and running quickly.
- **Deep expertise:** By using an outsourcer, corporations get access to security expertise they might not be able to afford in-house.

Cons:

- **Vendor viability:** Consolidation continues in the managed security service provider market so take extra time to check out a vendor's financial credentials.
- **Finding a match:** Turning over a critical function to a service provider can result in sleepless nights. If you don't consider the service provider a partner, things could take a bad turn.
- **Setting a safety net:** If you don't have the expertise in-house to address issues that might come up with the outsourcer, there could be trouble.

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NASTD

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A panel of members with experience implementing VoIP plan to share what they've learned.

Like California, some other states report savings, but the major force behind VoIP adoption is support for particular applications that IP handles better than traditional systems, particularly call centers. For example, New Jersey's telecom services agency is offering its first VoIP service, managed IP call centers for departments whose traditional gear is worn out, says David Blackwell, telecom manager for the Office of Information Technology.

Blackwell says the first potential customers, the departments of commerce and human services, are considering linking to the state's lone Avaya S8700 VoIP media server to support small call centers by installing remote extensions of the media server in each department. Without the IP technology, each department would have to buy its own PBX and call-center software, he says.

The IP call center makes it simpler to distribute the centers across the state in a way traditional call-center gear cannot, he says. So if a center in northern New Jersey was swamped with calls, adding on a call center in the south would just be a matter of entering the IP addresses of the phones in the southern center to the list of phones associated with the northern center, he says. With a traditional PBX-based call center, adding and removing phones would be cumbersome.

Meanwhile down in Texas

Texas has put this call-center flexibility to use to establish a human services hotline program in which citizens dial 211 to get information about programs. During business hours, Cisco Call Center and eLoyalty call-center software route calls to the nearest of 25 area information centers, but after-hours, they route them to the few information centers open 24 hours per day. The state estimates an 80% savings from what the same 211 system would cost using 800 numbers.

The same equipment could be used in disasters to handle overflow calls, says Jason Shugg, telecom specialist for the Texas Health and Human Services Commission. If a hurricane in Galveston, say, caused a spike in calls at the Houston information center, every third call could be routed to another city. Or calls on hold for more than one minute could be rerouted, he says.

Similarly, if an office had to be evacuated, call agents could take their phones to another information center, plug in and continue working, he says. The network would recognize the phone's IP address.

Texas also uses VoIP to trunk traffic between state agencies across the Texas Agency Network (TEXAN) ATM backbone, says Brian Kelly, assistant director of the Texas Telecommunications Services Division. Phone calls from Austin, the capital, to three other cities avoid toll fees by using TEXAN instead of the public long-distance phone network, he says. The state says it will save enough money over 11 months to pay back VoIP equipment costs, Kelly says.

But toll bypass is not a guaranteed way to save money, says Jack Ries, project manager for Minnesota's InterTechnologies Group.

A study of VoIP to carry phone calls among state facilities over Minnesota's ATM backbone showed that cost savings, while possible, might not materialize. The cost of equipment, upgrading access lines and reassigning access codes would all eat into potential savings, he says. "There may be cost savings," he says, "but with cost savings alone, you could probably not justify the cost of the infrastructure needed to do it."

In the best case, using VoIP for intercity calls could avoid $870,000 per year in toll calls, based on the study. This includes trunking Minneapolis/St. Paul-bound calls to a public phone network gateway in the twin cities where terminating them would be free.

While the state has doubts about VoIP trunking, there is a push to convert all state call centers to IP within the next year, Ries says, if budgets allow. The attraction is the ability to distribute call agents geographically inexpensively, he says.

Alaska warms up to VoIP

Alaska was an early supporter of VoIP and had plans to install a pilot program of 269 Cisco voice phones more than a year ago, but the project ran afoul.

The service provider to which the state had outsourced its telecom network failed to use Cisco's best practices, and the system didn't work. The replacement provider fixed the problems, and the state is looking to expand its VoIP use.

In Anchorage, the state is building new facilities and outfitting them with Category 5e and 6 wiring that has the characteristics specified by the IEEE to support VoIP. "It's more cost-effective to deploy voice over IP because of reduced wiring costs and lower ongoing operations costs," says Stan Herrera, Alaska's CTO.

VoIP also has proved useful in backing up a failing PBX and voice mail system, Herrera says. The state office building in Juneau was hit by lightning earlier this year and the strike disrupted the voice mail system attached to its Nortel PBX. In the future, if the Nortel voice mail dies, the Cisco Unity voice mail system associated with the VoIP gear used in the new buildings can back it up.

The phones still will be run by the PBX, but the VoIP voice mail will handle voice messages. "The Meridian phone sets will be rerouted through that Unity voice mail," he says.

Herrera says that ultimately one voice/data network should be built for state government.

"We really believe convergence is right for Alaska," he says. "The high cost of telecommunications in the state and large geographic expanses are challenges for us. It makes sense to distribute more of the technology over a single network vs. three separate ones. I'm sure it will show a return on investment." ■

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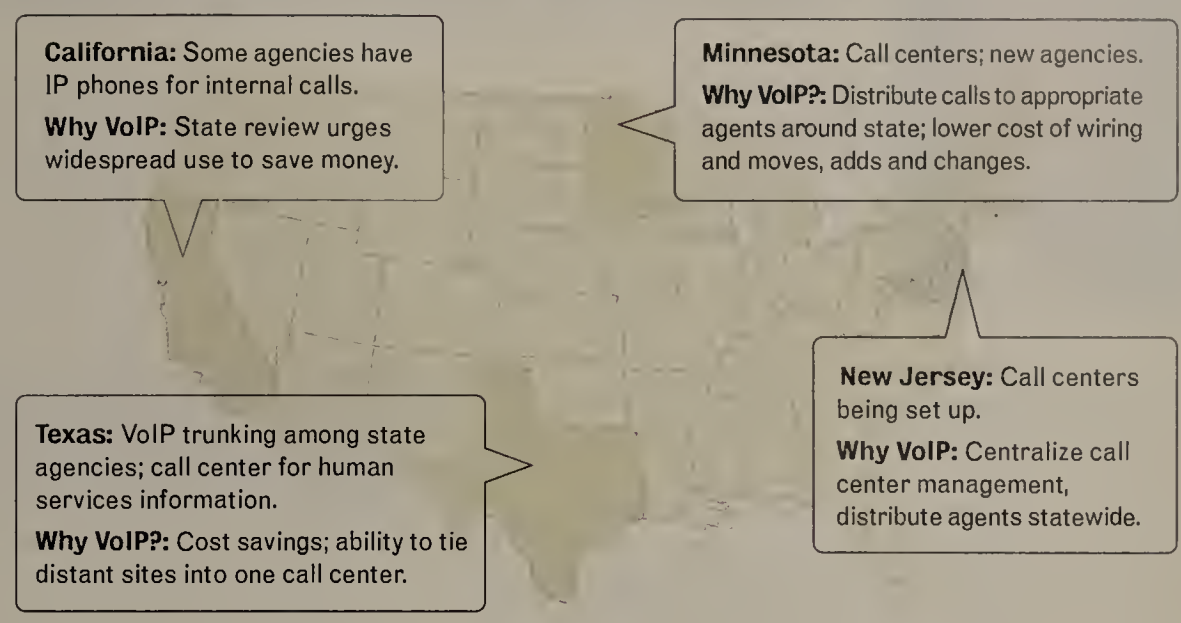
What states are doing with VoIP

VoIP is a popular technology among state telecom directors. Here's a sample of what some are doing:



Netscape upgrade could attract browser converts

■ BY PHIL HOCHMUTH

The emergence last week of a new Netscape browser based on open source technology signals that Microsoft's dominance in the browser market is not complete, observers say.

Some users are opting to install Netscape to remedy the security shortcomings in Microsoft Internet Explorer. But with more than 90% of Web users still running Internet Explorer, and the new Windows XP Service Pack 2 software addressing many browser vulnerabilities, analysts don't expect any revolution in the market.

AOL's new Netscape Navigator 7.2 is the first update to the browser in more than a year. Netscape is based on the Mozilla 1.7 technology. New features include integration with AOL Instant Messenger, improved print previewing and tabbed Web browsing, which lets users have multiple Web pages open in one Window.

AOL acquired Netscape in 1998 for $4.2 billion.

Last month, Internet Explorer lost a percentage point of market share to Netscape, according to WebSideStory.com, a company that tracks Web usage statistics. Although the loss didn't mean much for Microsoft — it dropped from 95% to 94% — the increase was significant for Netscape; even though its net gain was only 1% of the entire market, usage of Netscape was up 26% last month.

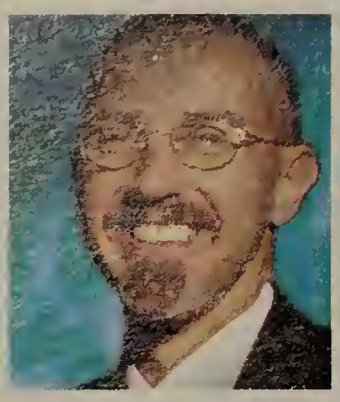
"There's been significant growth for non-Microsoft browsers lately," says Peter O'Kelly, a senior analyst with Burton Group. The growth might be attributed to improvements in Netscape and other browsers, as well as a growing concern about Microsoft's vulnerabilities.

But this probably isn't the start of a major market shift, O'Kelly adds.

"Competition is good," he says. "Now that there are compelling alternatives [to Internet Explorer], that puts the onus back on Microsoft to keep investing in its browser technology."

The IDG News Service contributed to this report.

BackSpin Mark Gibbs



Cheap and now meets medical gear and viruses

Following last week's rant about music industry lawyers running amok, reader Mark Brusch chided me: "Well, it's almost two years later and I will ask again: Do you feel up to organizing these people for the fight or do you want to sit back again and change the subject?"

One of the best ways to be heard is by joining the Electronic Frontier Foundation (EFF). If there is any group addressing the addressable when it comes to issues that concern the online world, the EFF is the one that gets my support and my money.

Through the EFF I have a voice because it is organized by sensible, intelligent people, and there is strength in numbers. If a significant number of BackSpin readers subscribed to the EFF we'd be a force to be reckoned with that would eclipse the petty, partisan interests and dogma of the bureaucrats and big media conglomerates.

On another topic, reader Tom Graly couldn't help but throw down the gauntlet as well: "Somehow over the years I've come to expect you to jump on major violations of common sense. Though your common sense isn't always mine, that's OK. [*Network World*] has run front-page stories on the FDA and medical device makers for the last two weeks with nary a word from BackSpin.... While I sympathize with the hospitals going after the device suppliers because that is the only recourse they have, the FDA needs to go to the source of the problem, not the victims."

So the medical services community is ticked off by medical equipment vendors' tardiness in upgrading operating systems that run their equipment. *Network World's* story last week said, "hospital IT administrators are voicing complaints that manufacturers are failing to patch Windows-based equipment quickly or at all, which then fall prey to computer worms."

So the gripe from Billy-Bob Medical Service is that the version of Windows that runs the gazillion-dollar ventro-fibriculating diastolyic gazornenplatz isn't being patched fast enough and Billy-Bob is worrying about the risks. What a load of bull.

Let's be realistic: Device makers are quite justifiably worried about upgrading operating systems without extensive testing — something that is arguably just this side of impossible to do if you are looking for verifiably secure, reliable operation. But the fear is that the risk of these devices being compromised by malware and hackers is not trivial.

OK, so say device vendors do that magical something and equipment still suffers a malfunction because a patch or upgrade causes instability, or despite enhanced security and reliability, a device gets infected and a patient dies.

Don't you think that all concerned would take legal action against the device vendor, the hospital and the guy who makes the coffee in the hospital canteen whether or not the equipment vendor has instigated an upgrade?

What really chaps my butt is the idea that device vendors are somehow responsible for the environment that their devices are deployed in! Don't pretend the equipment vendor is somehow the bad guy when you put the device in an unsafe environment.

If the equipment can't be upgraded to be reliable in your environment then either replace the damn thing with equipment that is, or protect it.

Put pressure on vendors involved, but don't expect them to carry your liability. They have businesses to run just as you do. If they don't want to upgrade and you decide to go with another vendor then tough on them and good for you.

If it is the other way around and you can't or don't want to find another vendor, and your existing vendor won't upgrade, then shut the hell up. You want to complain? Complain to everyone. If none of them can produce something that is acceptable then any or all of them are the ones to beat up. But be prepared to pay for what you want.

Better still, beat yourself up. You wanted it cheap and now.

Self-flagellation to backspin@gibbs.com

'NetBuzz News, insights, opinions and oddities

By Paul McNamara

Readers vote 'nay'

Network World readers get it, even if the people who run elections do not.

A diatribe here two weeks ago about the unchecked perils of electronic voting machines focused on the disconnect between an almost universal concern on the part of computer security professionals and a general lack of same on the part of the public. As might be expected given the audience of this publication, reader e-mail about that column sided largely with the worriers.

"I am a .Net Web developer and everything that I've heard about e-voting has me scared," writes Wes Virnelson. "I like the idea of using a paper absentee ballot to make sure my vote is really counted or rather could be re-counted. What I can't figure out is why e-voting machine manufacturers thought that a voting system with no paper trail was a good idea. It defies logic — especially after the Florida fiasco."

It does defy logic in every way except one: money. Buyers of the newfangled devices contend they will save taxpayer dollars — a disputed contention — and makers of the machines need no more motivation than the prospect of turning a buck.

"It would be nice to have a voting machine present me with a nice GUI with large buttons," Virnelson continues. "Couldn't the machine punch a card and then verify two or three times that it was accurately punched? Couldn't the machine then drop the card into a ballot box inside it? Couldn't the electronic version of the ballot be used to tally votes quickly, but the punched paper ballot be used as the 'official' vote?

"Technology is great, but the old saying holds true: To err is human, but it takes a computer to really mess things up."

Add politicians to that mix and, well, you get the mess we're in at the moment: a bitterly contested presidential election two months away and the all-too-real prospect that voters — especially those backing the eventual loser — will not trust the announced results. If the Electoral College tally should come down to the margin of a single state that lacks the ability to conduct a full recount, we'll be fortunate if our democracy survives to sort it all out in time for 2008.

"A real bottom-line analysis is that there are six statutes, reviews and independent audits that Las Vegas [gaming] machines must go through periodically," writes Ron Radick, "but not one for e-voting. Wow."

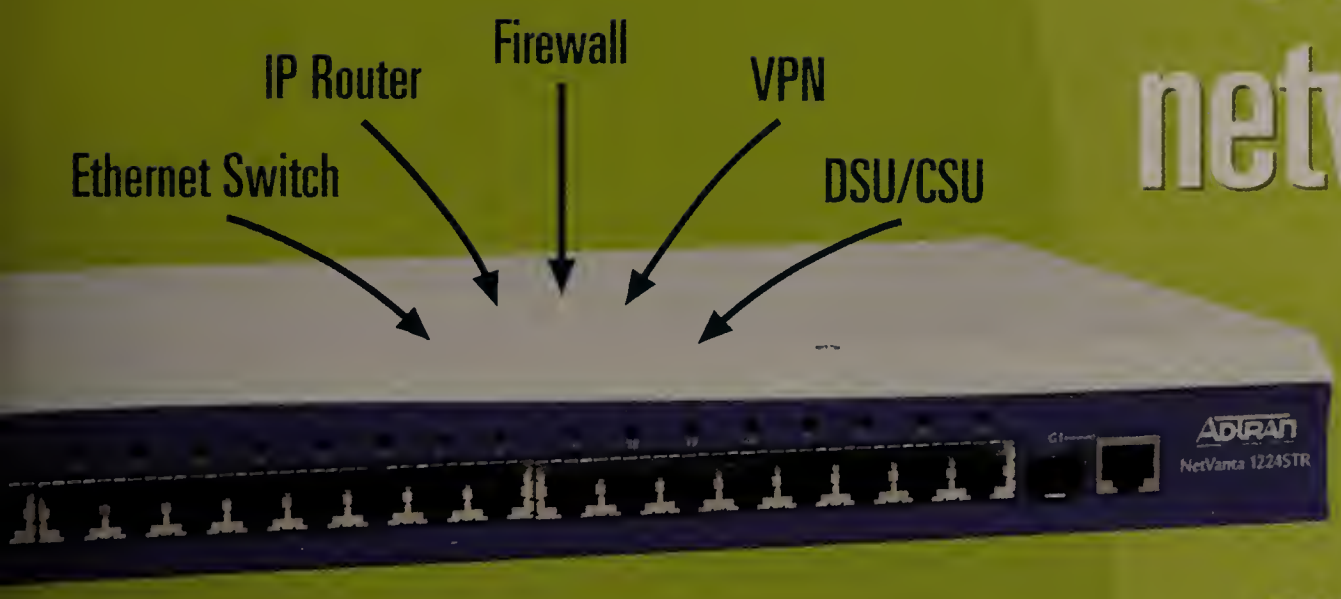
Of course, the people who run Las Vegas know full well that nothing would kill their golden goose faster than the gambling public reaching the conclusion — right or wrong — that the games are literally rigged, as opposed to merely stacked to the advantage of the house. Yet somehow the people who run elections in this country have failed to grasp that simple concept and are in many locales barreling ahead with e-voting schemes that provide no meaningful protection against fraud, most importantly, a paper trail to be recounted if necessary.

Radick also offered up a trio of Web sites that anyone interested in this topic should peruse: www.verifiedvoting.org, www.eff.org/e-vote and http://blackboxvoting.com.

It's nice to know that some of you are stepping up to fight this madness.

"I have been trying to do my part to inform the election powers that be by forwarding URLs referenced in a weekly SANS newsletter that deal with e-voting to the state of Wyoming's Secretary of State's office," writes Rob Mitchell. "As far as I know this has had a positive impact in that the state hasn't deployed electronic voting systems. Thanks for spreading the word. Hopefully, more IT folks will educate the political folks about the dangers of e-voting."

All this ranting is bad for my blood pressure. I'm off for two weeks of vacay. Postcards to buzz@nww.com.



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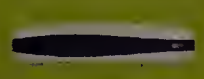

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